

IN THE UNITED STATES DISTRICT COURT FOR THE
EASTERN DISTRICT OF VIRGINIA
Alexandria Division

WILLIAM MICHAEL FREDERICK TAYLOR)	
)	
Plaintiff,)	
v.)	1:15-cv-1607 (LMB/JFA)
)	
JOSEPH MATAL, performing the functions and)	
duties of Under Secretary of Commerce for)	
Intellectual Property and Director of the United)	
States Patent and Trademark Office,)	
)	
Defendant.)	

WILLIAM MICHAEL FREDERICK TAYLOR)	
)	
Plaintiff,)	
v.)	1:15-cv-1684 (LMB/JFA)
)	
JOSEPH MATAL, performing the functions and)	
duties of Under Secretary of Commerce for)	
Intellectual Property and Director of the United)	
States Patent and Trademark Office,)	
)	
Defendant.)	

WILLIAM MICHAEL FREDERICK TAYLOR)	
)	
Plaintiff,)	
v.)	1:16-cv-12 (LMB/JFA)
)	
JOSEPH MATAL, performing the functions and)	
duties of Under Secretary of Commerce for)	
Intellectual Property and Director of the United)	
States Patent and Trademark Office,)	
)	
Defendant.)	

MEMORANDUM OPINION

Plaintiff William Taylor (“plaintiff” or “Taylor”), acting pro se, has filed three civil actions against the Director of the U.S. Patent and Trademark Office (“defendant” or “USPTO”) under 35 U.S.C. § 145, each contesting the denial of one of three closely related patent applications. See Case No. 1:16-cv-12 (U.S. Application Serial No. 10/425,553); Case No. 1:15-cv-1684 (U.S. Application Serial No. 11/391,501); Case No. 1:15-cv-1607 (U.S. Application Serial No. 11/807,860).¹ The applications are all continuations of the same parent application and each claims a priority date of May 18, 1993 and pertains to alleged inventions associated with plaintiff’s “GPS Explorer,” an information system incorporating Global Positioning System data. Plaintiff claims that “over \$600 Billion worth of smartphones and similar devices, incorporating [his] location based technology, are being manufactured and sold around the world every year.” Pl. ‘501 Mem., [Dkt. No. 68] at 2. The parties were permitted to engage in discovery² and have filed a total of five motions for summary judgment, each of which has been fully briefed. See Def. ‘533 Mot., [Dkt. No. 50]; Pl. ‘533 Mot., [Dkt. No. 62]; Def. ‘501 Mot., [Dkt. No. 54]; Pl. ‘501 Mot., [Dkt. No. 68]; Def. ‘860 Mot., [Dkt. No. 59].³ Finding that oral argument would not

¹ For the sake of clarity, for summary judgment pleadings docket entries will generally be cited by reference to the terminal digits of the patent application rather than the case number, *i.e.*, Def. ‘553 Mem., [Dkt. No. 51] at 3, with docket numbers appearing the first time a pleading is referenced. All other references to pleadings will be proceeded by the relevant case number.

² Early in the proceedings, the parties filed a consent motion to consolidate the three related civil actions for discovery and pretrial case management, No. 1:15-cv-1607, [Dkt. No. 15], which the Court granted, *id.* at [Dkt. No. 16]. The parties were given multiple extensions of time to complete discovery and the pro se plaintiff received well over thirty days to file his motions for summary judgment, as well as extensions for filing response and reply briefs. The Court also accepted the pro se plaintiff’s improperly filed surreply briefs and permitted the defendant to respond.

³ On May 8, 2017, a month after briefing on the other motions for summary judgment was complete, plaintiff filed a motion for leave to file a motion for summary judgment for the ‘860 Application. No. 1:15-cv-1607, [Dkt. No. 94]. The Court denied the motion, finding that it was

assist the decisional process, the Court has resolved these motions on the submitted materials and for the reasons stated in this Memorandum Opinion, defendant's three motions for summary judgment will be granted, Def. '533 Mot., [Dkt. No. 50]; Def. '501 Mot., [Dkt. No. 54]; Def. '860 Mot., [Dkt. No. 59], and plaintiff's two motions for summary judgment will be denied, Pl. '533 Mot., [Dkt. No. 62]; Pl. '501 Mot., [Dkt. No. 68].

I. BACKGROUND⁴

On November 14, 1995, plaintiff filed an application with the USPTO (U.S. Application Serial No. 08/553,383) ("Parent Application"), claiming priority to a Patent Cooperation Treaty ("PCT") application filed on May 18, 1994 and a United Kingdom patent filed on May 18, 1993 (U.K. Application Serial No. GB9310175.6) for the GPS Explorer. According to the application, the invention uses GPS data to "identify and describe places of specific interest to the user, landmarks, and the history of nearby buildings, or locate hotels, hospitals, shops and products within a radius of the [user's] present position" using various modes of presenting information ranging from "audio only mode" to "virtual reality mode." A4008, A4013, A4019.⁵ Over the course of the next 13 years, plaintiff filed four continuation applications respectively dated August 11, 1998 (U.S. Application Serial No. 09/132,433), September 1, 2000 (U.S. Application Serial No. 09/653,042), June 7, 2001 (U.S. Application Serial No. 09/878,040), and April 28, 2003 (U.S. Application Serial No. 10/425,553), culminating in the '553 Application. After

untimely and that plaintiff's opposition and surreply to the defendant's motion for summary judgment fully explained his argument. *Id.* at [Dkt. No. 96].

⁴ The full version of the claims associated with the final version of each application, as drawn from the appendices in plaintiff's PTAB briefs, are included in the Claims Appendix below.

⁵ References to A_____ are to the administrative record, which is sequentially numbered across the three cases but divided into three separate parts, one for each patent application and corresponding civil action. *See* No. 1:15-cv-1607 ('860 Application) [Dkt. Nos. 25-26] (A0001-1027); No. 1:15-cv-1684 ('501 Application) [Dkt. Nos. 21-22] (A2000-3176); No. 1:16-cv-12 ('533 Application) [Dkt. Nos. 21-23] (A4000-5533).

several rounds of amendments to the ‘553 Application, the examiner determined that it impermissibly contained multiple inventions. In response, plaintiff struck claims regarding the additional inventions from the ‘553 Application and filed two divisional applications, the ‘860 Application (U.S. Application Serial No. 11/807,860) and the ‘501 Application (U.S. Application Serial No. 11/391,501). Each of the three applications, which are discussed in greater detail below, appears to correspond to one version of the GPS Explorer—either an audio, visual, or virtual reality presentation of information to the user—and each application corresponds to one of the instant civil actions.⁶ Each application is a continuation of the original Parent Application filed in 1995, each has the same priority date and each the same specification. Def. ‘860 Mem., [Dkt. No. 60] at 2 n.2

A. The GPS Explorer’s Specification

The specification offers a general description of the GPS Explorer and the desirability of such a tool:

GPS EXPLORER is a portable information system using [GPS] data as a key to retrieve audio and video from a database or from broadcast data. The user may preselect the type of data of interest to him, then as his position, direction, speed, altitude or attitude change and the time of day changes, this is detected by the GPS receiver and the system automatically retrieves the appropriate data from the database. The device incorporates an internal exchangeable database on compact disk and can also access external databases and broadcast data.

...

On a journey the system can for example be set to automatically identify places of likely interest to the user, to describe the history of nearby buildings or the prettiest route to take. The user can also initiate an automatic search of the

⁶ Defendant explains the relationship among the applications as follows: “All of the applications involve a portable information system requiring data retrieval based on a user’s location. In very general terms, all of the applications require the information system and a presentation component to show information to the user. The ‘860 application . . . additionally requires an orientation determining component which determines a user’s view angle of azimuth. The ‘501 application additionally requires receiving a data transmission and the ‘553 application additionally requires video overlay and route guidance.” Def. ‘860 Mem. at 2 n.2.

database for specific things of interest to him, such as landmarks, hotels, hospitals, shops or products, usually, though not necessarily within a radius of his present position.

...

To enable the user to operate the system hands-free and eyes-free while driving, flying, sailing, riding or walking, it may be controlled using audible menus and voice command. Telephone calls may also be made automatically via the integrated cell phone or satellite phone using numbers retrieved from the database.

A4006. According to the specification, the device can be controlled by voice command using an audible menu system or by keyboard, switch, or joystick. A4007. The specification proposes four versions of the device: an audio only interface, an audio and visual interface, an information system that incorporates real time information from a radio or television receiver, and a virtual reality version that would "generate virtual objects" based on the user's GPS position and project them into the user's field of view using split image spectacles." A4008-14.

Figure 1 "shows the audio only version of the device comprising: an audio earpiece 1, microphone 2, and the GPS receiver 3, the CD drive 4, and the processor 5." A4008.

Figure 1

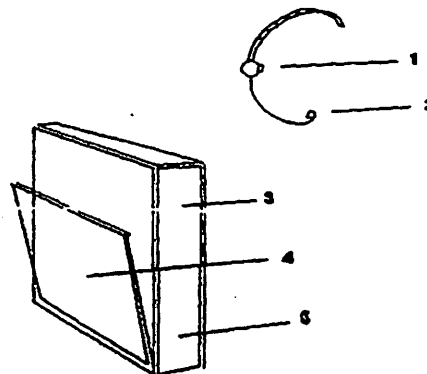


Figure 4 "shows a version of the audio/visual system based on a standard portable PC. Still and/or motion video sequences will be stored on GPS-CD along with the GPS coordinates." A4012.

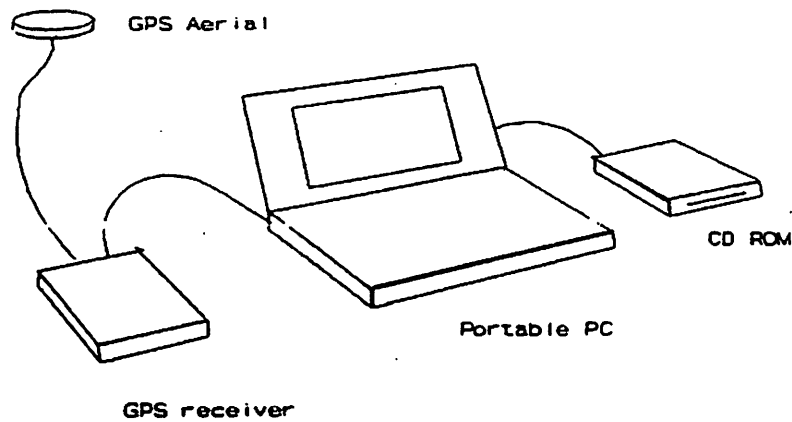


Figure 4

Figure 2 “shows the basic logic used to monitor the user’s position and to retrieve and play the appropriate audio,” A4008, and Figure 3 “shows a map on which large dots represent the positions determined by GPS at which specific audio phrases will be selected from the database or radio broadcast and played.” A4008.

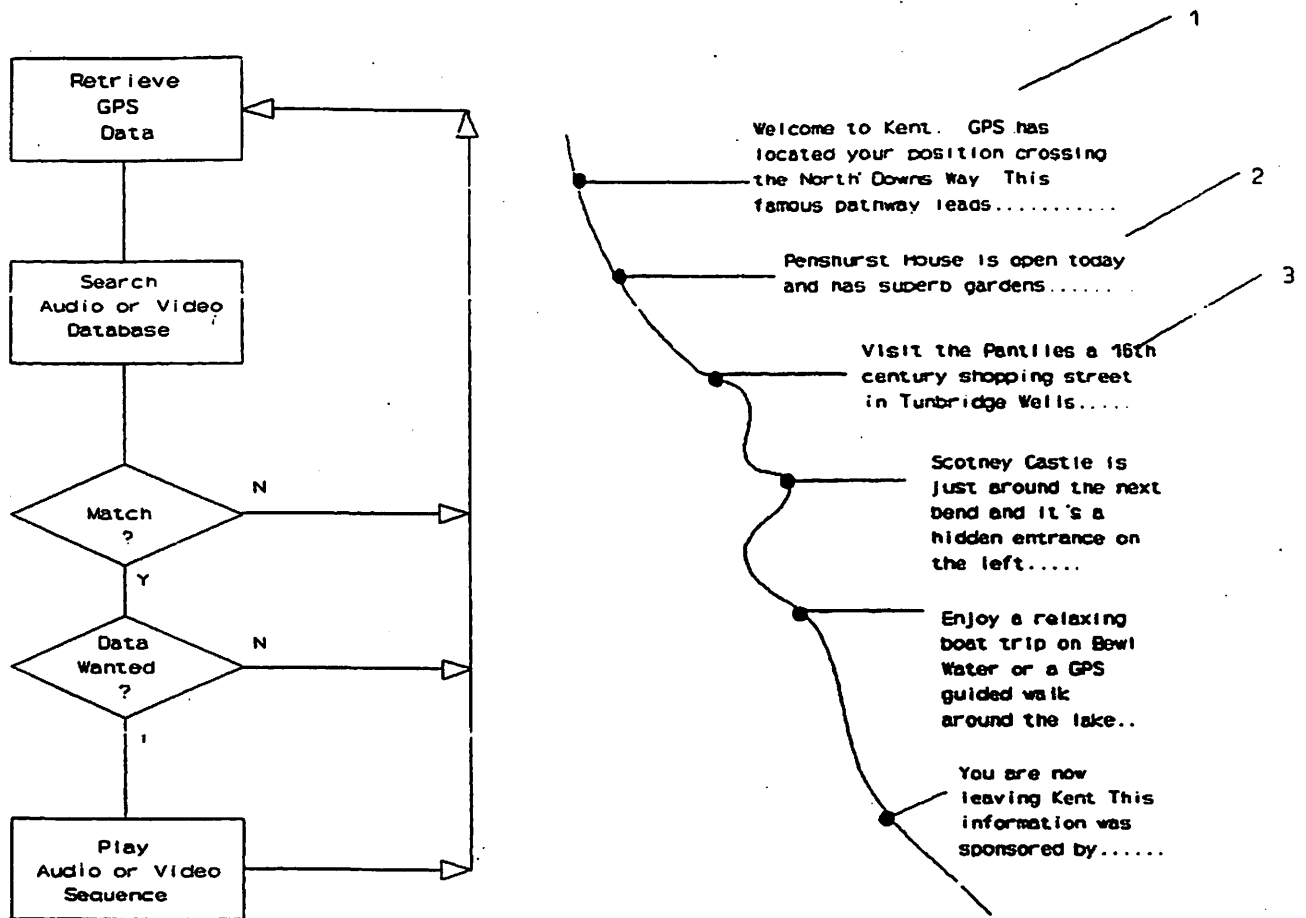


Figure 3

Figure 2

The specification's discussion of the "audio only" version also describes various modes of operation from which the user may select. The modes include "en route mode," which shows a typical journey by car; "tour mode," where the system will provide tour guidance and point out things of interest; "direction oriented guidance mode," which offers the user audio commands with directions to their chosen destination; "what's on mode," which provides a short description of nearby attractions; and the user may select an option to hear more, as well as several other modes. A4008-10.

B. Patent Prosecution Histories

1. The '553 Application (Case No. 1:16-cv-12)

The '553 Application, which describes a portable presentation device that presents a video picture of the real world to the user, was filed on April 28, 2003 as a continuation of the original application filed in 1995. A4003-18. It contained 15 claims. A4003-18. Plaintiff subsequently made three sets of amendments⁷ before the examiner issued a final office action on October 13, 2005, explaining that the Application contained multiple separate inventions and therefore claims 74-90 were withdrawn from consideration "as being directed to a non-elected invention." A4453. In addition, the remaining claims, 39-73, were rejected as obvious based on prior art. A4456-58. The Application went through twelve further rounds of amendment, A4471, A4531-38, A4531-38, A4630-46, A4667-76, A4775-81, A4890-95, A4927-32, A4970-77, A5051-54, A5131-54, A5202-12, and all the pending claims were rejected five more times in

⁷ A preliminary amendment filed on October 24, 2003 added claims 16-38. A4037-47. A second preliminary amendment filed on December 11, 2003 cancelled claims 1-15. A4048-54. In a Non-Final Action, the examiner rejected claims 16-38 as anticipated by prior art. A4059-65. Plaintiff responded by arguing that his Application had priority over the prior art. A4066-68. On, January 14, 2005, the examiner again rejected claims 16-38, this time finding that they were obvious based on other prior art. A4317-22. Plaintiff responded by cancelling claims 16-38 and adding new claims 39-90. A4408-15.

final office actions, A4586-92, A4825-39, A4953-58, A5156-72, A5266-77. Once the claims relating to separate inventions were removed and included in the two separate patent applications, the '553 Application's distinguishing feature appears to be the claim for an information system with a "video picture" presentation device. See Claim 206.

In the last of the final office actions, dated May 14, 2012, the examiner withdrew claims 247-48 as being directed to a non-elected invention and rejected claims 206, 207, 210, 220, 222, and 225-246 on three independent grounds: failure to provide a written description, indefiniteness, and obviousness. A5266-77. In rejecting all the pending claims on the basis of inadequate written description, the examiner explained that the "claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." A5268. Each claim was also rejected as indefinite in multiple places. A5270. For example, the examiner explained that "the function of determining route guidance from a sensed position to a location associated with the sensed position is misdescriptive since it is not clear how guidance is provided from a sensed location to a location is that [sic] based on the sensed location." Id. Finally, all of the pending claims were rejected as obvious under prior art, based on detailed findings set forth by the examiner. A5270-76.

On September 14, 2012, plaintiff filed a Notice of Appeal to the Board of Patent Appeals ("PTAB" or "Board"). A5305. Throughout the appeal, as well as during at least part of the prosecution, plaintiff was represented by counsel. On July 7, 2015, following full briefing, the PTAB affirmed the examiner's rejection of the pending claims, focusing on independent claims 206 and 220. A5412. As to written description, the Board agreed with the examiner that the "disclosure fails to provide detailed steps for performing the functions recited in the claims."

A5418. The Board also found that, “even if we accept [plaintiff’s] argument that ‘the invention relies on conventional technology for portable GPS navigation . . . , conventional programming and database accessing procedures, and conventional presentations of pictures and computer generated objects[,]’ to the extent that the claims recite inventive functionality, the Specification does not provide any detailed steps for performing such inventive functionality.” Id. (ellipses in original). The Board supported that conclusion by explaining that the specification “provides no description or steps allowing one skilled in the art to understand how the invention intends to perform the claimed function of selecting advertising, or how selected advertising would be presented while presenting a real world video picture with a computer generated overlay.” Id. In addition, the PTAB found that the specification contained “no teaching of how a destination would be selected, and how route guidance to that destination would be performed” and the only reference to the “destination oriented guidance mode” was set forth in the description of the “audio only version.” A5420-21. The PTAB further found that “the claimed functions of (1) ‘user input’ selecting a ‘portion of the video picture,’ (2) determining the claimed ‘location associated with the user input selection,’ and (3) determining and presenting route guidance to that location, ‘would require much more . . . skill and knowledge than is disclosed in the specification.’” A5421.

The PTAB also affirmed the rejection of all the claims based on indefiniteness, finding that the two independent claims, 206 and 220, each of which recite providing guidance “from the sensed position to a location associated with input user selection,” were indefinite. A5422. As the Board explained, although claim 206 provides that user input is created by selecting a portion of the video picture, it is silent regarding how that portion is selected, especially since the “destination oriented guidance mode” is disclosed to be audio only. Id. In addition, dependent

claims 241 and 244 were found to be indefinite because it was not clear what the distinction was between “audio only mode” and “eyes-free mode.” A5422-23.

The PTAB did not reach the merits of the examiner’s obviousness rejections because it found it was “unable to make a proper review of the prior art rejections without having to speculate on the meaning of the rejected claims.” A5424.

Plaintiff requested a rehearing arguing that the PTAB misunderstood the legal standard for written description and definiteness. A5440-52. On November 6, 2015, the PTAB granted the request for rehearing to the extent that it reexamined its decision in light of plaintiff’s arguments but ultimately found that it had not misapprehended the relevant law and did not modify its findings. A5453-67. On January 5, 2016, plaintiff, acting pro se, filed civil action 1:16-cv-12 in this court seeking review of the PTAB’s decision under 35 U.S.C. § 145. See No. 1:16-cv-12 [Dkt. No. 1].

2. The ‘501 Application (Case No. 1:15-cv-1684)

On March 27, 2006, plaintiff filed U.S. Application Serial No. 11/391,501 as a divisional of the ‘553 Application, A2563, claiming the same May 18, 1993 priority date as the ‘553 Application, A2378. The ‘501 Application contained 21 claims and the same specification as the ‘553 Application. A2000-15. Its primary distinction from the ‘553 Application is its description of the invention as a “system for mobile searching of information by a portable device” having a presentation component which includes an “audio output for presenting . . . information to the user.” A0341. The claims in the ‘501 Application underwent eight rounds of amendment, A2362-76, A2562-73, A2646-55, A2695-703, A2725-33, A2830-38, A2863-84, A2947-68, and at various points four final office actions rejected all the pending claims, A2400-78, A2679-86, A2749-57, A2970-86. In the last of the final office actions, which was issued on August 10,

2011, all the pending claims, namely claims 1, 7, 8, 11, 18, 24, 26, 29, 30, 34, 35, 38, 39, 41, 47, 51-53, 56, 57, and 61-75, were rejected for lack of written description, enablement, and obviousness. A2970-86. The examiner's analysis was similar to that for the '553 Application, although the prior art references were different. Id.

Plaintiff responded by amending claims 1 and 67, arguing that the amendments should be allowed because they did not require any further search or consideration. A2987-3007. On December 12, 2011, plaintiff filed a Notice of Appeal to the PTAB. A3012-16. In light of plaintiff's amendments to the claims, the examiner withdrew the written description and enablement rejections and the appeal proceeded on only the obviousness rejections. A3069. Plaintiff was again represented by counsel and the appeal was fully briefed. The appeal was decided by the same panel that heard the '553 Application appeal. Although the Board reversed the examiner's prior art rejections because such determinations required speculation about the meaning of the rejected claims, it entered new grounds for rejection based on its findings that all of the appealed claims failed to comply with the written description requirement and were indefinite. A3112-21. As the Board explained, the "Specification provides insufficient disclosure to allow one skilled in the art to recognize that the inventor invented selectively storing received data based on a sensed position and accessing and searching selectively stored data based on the sensed position and the received data retrieval criteria, as called for by claims 1 and 35." A3117. With respect to indefiniteness, the Board found that the term "data retrieval criteria" was never defined or discussed. A3118.

Plaintiff requested a rehearing, arguing that the PTAB overlooked support in the Application for claims 1 and 35 and misapprehended whether a person skilled in the art would have readily understood the data selection techniques in the appealed claims. A3122-37. On

November 6, 2015, the PTAB granted the request for rehearing to the extent that it reconsidered its decision in light of plaintiff's arguments but ultimately it did not find that its rejections were erroneous. A3138-49. On December 18, 2015, plaintiff, acting pro se, filed civil action 1:15-cv-1684 in this court seeking review of the PTAB's decision under 35 U.S.C. § 145. See No. 1:15-cv-1684 [Dkt. No. 1].

3. The '860 Application (Case No. 1:15-cv-1607)

On May 29, 2007, plaintiff filed U.S. Application Serial No. 11/807,860, as a divisional of the '553 Application, again with a priority date of May 18, 1993. A0005, A0380. The Application included the same previously discussed specification and had 72 claims. A0005-32. Unlike the other two applications, the '860 Application described presenting the information to the user as a computer-based simulation that was responsive to the user's angle of view. A0863. Plaintiff amended the claims twice, A0367-78, A0526-35, before all of them were rejected in a final office action on January 26, 2010, A0581-88. Then, plaintiff amended the claims twice more, A0596-604, A0702-06, but they were rejected in a final office action on October 19, 2011 on the basis of lack of enablement, failing to further limit the subject matter of the claims on which they depend, and obviousness. A0799-810

Plaintiff, still represented by counsel, filed a Notice of Appeal to the PTAB on April 19, 2012. A0816. On July 2, 2015, the same panel that heard the appeals on plaintiff's other applications affirmed the rejection for failure to comply with the enablement requirement, reversed the examiner as to the obviousness finding, and added indefiniteness as an additional basis for rejection. A0953-70. Specifically, the Board found that "conflicting evidence regarding the meaning and relation of the terms 'orientation' and 'view angle of azimuth,' which is based on consideration of their ordinary meanings and the Specification," led to the conclusion that

“the original disclosure does not enable an orientation determining component that determines a user’s view angle of azimuth, as claimed.” A0958-50. In addition, “the Specification fails to describe or enable one skilled in the art to present a simulation of retrieved data based on a selected mode” and “simulation is not a ‘mode’” in the context of the claims. A0961. Based on those findings, the PTAB concluded that “the Specification fails to enable one skilled in the art to present a simulation of retrieved data based on a selected mode.” A0962. The Board reversed the examiner’s rejection of two claims for failing to further limit the subject matter of the claim from which they depend, finding that the claimed subject matter could be understood as coexisting rather than contrasting. A0963-64. In addition, the Board entered a new ground for rejection finding that “due to the conflicting evidence and arguments regarding the breadth and meaning of the claimed terms ‘orientation’ and ‘view angle of azimuth,’ and their relation to each other, . . . the meaning of each of these terms is unclear” and “[o]ne skilled in the art would not understand what is claimed when the claims are read in light of the specification.” A0964. Lastly, as before, the Board declined to reach the obviousness rejections because it found that the meaning of the claims was indefinite. A0965.

Plaintiff requested rehearing, arguing that PTAB misapprehended the legal standard for definiteness and misunderstood a key term in the patent in its enablement decision. A0971-86. On October 2, 2015, the PTAB granted the request for rehearing to the extent that it reconsidered its decision in light of plaintiff’s arguments but discerned no overlooked or misapprehended issues in its earlier decision. A0987-1002. On December 2, 2015, plaintiff, acting pro se, filed civil action 1:15-cv-1607 in this court seeking review of the PTAB’s decision under 35 U.S.C. § 145. See No. 1:15-cv-1607 [Dkt. No. 1].

C. Evidence Before the Court

Taylor presented evidence in these proceedings, which included his deposition as well as several expert reports. In his deposition, plaintiff states that in 1992 when the British government “announced an innovation award system,” he decided to “do something about it.” 1 Taylor Dep., Def. ‘533 Ex. 2, [Dkt. No. 51-2] at 10:2-15.⁸ In 1992, he submitted an application for such an award “with the idea of village signs and town signs that would welcome you and tell you what was happening.” Id. at 10:21-22. Although that idea did not receive an award, plaintiff was committed to reapplying. Because a patent application was a condition of award funding, Taylor pursued another idea: “virtual sign[s]” whereby GPS would sense when a user was entering a town and then tell the user something about the town. Id. at 11:2-17. He testified that he drew up a “flowchart” or “diagram” in mid-1992 and then tried to put the idea into effect. Id. at 11:19-21, 15:9-10. As evidence Taylor points to an undated, one-page, hand-drawn sketch with the words “GPS Explorer” written at the top, depicting a road and nearby attractions along with call-out bubbles containing what appear to be verbal descriptions of the attractions. Def. ‘533 Ex. 4, [Dkt. No. 51-4].

In 1993, Taylor developed a simulation of his mobile device to submit for an innovation grant. The simulation was designed on a desktop. 1 Taylor Dep. at 39:19-40:6. He also formed a company and began buying equipment such as computer workstations and servers. Id. Plaintiff testified that he started development work in about 1995 and hired an engineer, Steve White, in 1997. Id. at 19:6-13. White, who appears to be both a fact and an expert witness in these proceedings, testified in his deposition that he developed the data component of the system.

⁸ For ease of reference the Court has referenced the exhibit numbers in one case, the ‘553 case, No. 1:16-cv-12, wherever possible.

White Dep., Def. '533 Ex. 5, [Dkt. 51-5] at 16:13-20. He described building a website through which people could enter the latitude and longitude of their particular business, a description of their goods or services, and details such as operating hours. Id. at 17:13-22.

During White's involvement, the system consisted of a GPS tracking device and a mobile phone capable of searching the Internet, both of which were plugged into a laptop. Id. at 18:18-19:9. White explained that using IBM software called Voice Type the system was capable of receiving voice commands from the user. Id. at 57:19-58:6. The audio files supplying information to the user could be played using free software provided with versions of Microsoft's web browser Internet Explorer. Id. at 39:10-20.⁹ The information relayed by the GPS device would "be matched against the same [location] information in the database. If the data in the database was in the right place, wasn't too far away depending on what you set for a range and if it satisfied the criteria that the user had put in such as they wanted to see golf courses, then if you got within that range, it would be returned and that would be spoken. The sound would come out of the computer. The user could then say stop or repeat or not interested." Id. at 19:6-18. White admitted that he developed the system based on the audio-only embodiment, id. at 24:20-22, and explained that he did not see the need for the video embodiment described in the specification because usually the user would be close enough to the place being described that they would not need a picture of it, they could just see it, id. at 25:1-18. White also said that although "there was an option about navigation," he did not think of the system as a navigation system because there were plenty of those on the market and he did not see the point in redeveloping any of those. Id. at 27:15-28:1. As far as he was concerned, as long as the system

⁹ Elsewhere, plaintiff acknowledges that he filed his patent application "before Microsoft Internet Explorer" existed. Taylor Statement at 6.

provided latitude/longitude coordinates that the user could pick out on a paper map, that “was good enough.” Id. at 36:9-17.

The databases White created were capable of being stored on a CD and they were also available on the Internet, where they could be downloaded by a user and stored on the user’s system. Id. 44:17-45:4. To look for accommodations or restaurants, a user would input selection criteria into the system, although White acknowledged the system had a limit for the number of criteria that could be input, which he believed was either five or ten. Id. at 45:6-15. In White’s test version of the database, the categories of information that the software could process were as follows: “[g]arden, hotel, farm, B&B, castle, information, restaurant, accommodation, conferences, ruins, . . . tourist information center, Welsh cooking, vegetarians, swimming pool, ballroom, tourism, food, four-star, . . . maps, Wales.” Id. at 65:6-66:15.

White ultimately designed the “en route mode” and the “tour mode,” id. at 51:11-21, but he acknowledged that “[n]ot all of the stuff that’s mentioned in the patent has been developed but just the stuff [he talked] about,” id. at 32:13-15. For example, he did not develop the simulation function and did not do much with graphics. Id. at 34:4-35:15. In 1998, Taylor and White had a prototype functioning on a Toshiba Libretto laptop. 1 Taylor Dep. at 37:6-8. White left the project in 1999 because the innovation grant money had run out and he had other opportunities. White Dep. at 16:5-12.

According to a May 2002 progress report submitted in conjunction with the project’s grant funding from the British government, the Libretto prototype did not include a “select mode,” the functions for voice control and downloading area information were designated as “WIP,” a common acronym for work in progress, and the compass input function was labeled as

“R&D,” which the Court infers meant that it was in the research and development phase. Pl. ‘860 Ex. 7, [Dkt. 74-16] at 4.

According to Taylor, the next prototype, which was designed on an iPAQ, was completed in 2001. 1 Taylor Dep. at 43:13-19. But the May 2002 progress report indicates that the prototype did not include many of the features discussed in the specification and claims. For example, the “en route mode” was described as having an unsolved problem with a bug, the “what’s on mode” was listed as “WIP,” voice control was described as “N/A yet,” and downloading area information was “[o]n hold.” Pl. ‘860 Ex. 7 at 4.

Taylor admitted that over time the concept of the invention changed, particularly with the growth of the Internet, which plaintiff described as taking off in 1994. 2 Taylor Dep., Def. ‘533 Ex. 3 [Dkt. No. 51-3] at 11:21-12:2. At that point, plaintiff “attempt[ed] to play catch-up and move from [his] previous conception to having more of an involvement in the internet.” Id. Plaintiff ultimately moved away from pursuing a hardware platform for the device because manufacturing was “a very costly exercise” and

moved towards making software to run on a device and waiting and waiting and waiting for a suitable platform to become available. A laptop wasn’t a suitable platform really. It needed a handheld device. So they only started coming around about 2000, 2002. And [he] thought, well, if [he got] an app developed, it [could] be sold on one of those smart devices.

Id. at 12:4-18. He acknowledged that in addition to the challenge of finding the right physical device, “[t]he bigger problem” was the database because “it really required a major player like Yellow Pages or someone who had the data. But they had to have the data and be prepared to digitize it by location and it’s been a long time coming.” Id. at 13:11-19.

D. Expert Testimony

Plaintiff has designated four third-party experts to address whether the invention claimed in his applications was capable of being built in 1993: White, who helped build his 1998 prototype; Stephen Miller, who designed computer-based learning products in the 1990s for the aviation sector; John Carlton, who has an aeronautics degree and experience building flight simulators; and Brian Whiting, a lecturer in land surveying at the University of East London with expertise in geographical orientation. Each of the expert reports submitted by these experts speak primarily to enablement and the technical capabilities that existed in 1993.

White states that the Taylor's "specification was clear and sufficiently complete to allow [him] to develop the system unaided using only hardware and software that was widely available in the market place from late 1993 or even earlier. The level of software development [he] employed was basic and any competent coder could have built the system without resort to specialist knowledge. The design of the system relied only on 2nd level school mathematics, a skill readily available within the coding community." *White Supp. Rep. ¶ 1.6.¹⁰ He assessed that the skill in the art required to develop plaintiff's invention "was widely available throughout the world-wide software development community at the time his patent was first filed and that [plaintiff's] patent specification was sufficiently clear and comprehensive to be used as a blueprint for producing the type of system [plaintiff] defines." Id. ¶ 1.7.

¹⁰ Plaintiff was given leave to file evidence on a DVD after he represented that there was no other way to present his evidence. No. 1:16-cv-12 [Dkt. No. 82]. He filed one DVD in each case but the contents appear to be identical. Unfortunately, the materials he submitted are not properly labeled, making them difficult to reference with standard citation conventions and creating uncertainty about whether the materials referenced were properly produced during discovery. In spite of these problems, the Court endeavored to evaluate plaintiff's evidence and give it due consideration. For clarity, citations to exhibits contained on the DVD are preceded by an asterisk.

Miller's report states in relevant part that "in the years 1990 to 1993 [computer programmers] were capable of performing the following functions

integrating data from native data base [sic] formats, simulation from coded and multimedia developed code, animation from coded and native multimedia developed code, full screen and windowed video both in full motion or digitally frozen and that programmers were able to support touch input, continuous touch input with graphic, video and audio results, and that we could overlay and remove images on images without corruption of the background image.

*Miller Rep. at 2. Miller "further confirm[ed] that all this was achieved by both expert and novice multimedia developers on commercially available . . . PCs augmented by audio, hi-res[olution] graphic and video overlay cards." Id. When questioned about these conclusions at his deposition, Miller stated that he had a high level understanding of the invention but was "not conversant with any of the details" and had not read plaintiff's patent specification. Miller Dep., Def. '533 Ex. 6 [Dkt. No. 51-5] at 9:19-21, 10:14-18.

Carlton, the expert with a background in flight simulation, states in his report that "the invention described in the patents relied upon existing technologies; and that in 1993, the inventor proposed an inspired combination of suitable technologies, configured to work together in the unique way that he specified." *Carlton Rep. at 32. He adds that "[s]killed and experienced flight simulation engineers of that time would have been able to understand and implement workable solutions using standard techniques based upon the concepts described in the invention description." Id. The only thing Carlton reviewed in writing his report was the patent specification. Carlton Dep., Def. '533 Ex. 8 [Dkt. No. 51-8] at 14-21. He believes that in order to build the invention described in the specification one would need a database expert, an expert in sensors, a commercial artist, an operating system expert, a flight simulation expert, a propulsion expert, an expert in aircraft systems, and a project manager. Id. at 40:18-46:3.

Dr. Whiting's report states that he "understand[s] that there is some query whether in 1993 there was sufficient knowledge/capability to be able to determine geographical orientation/direction." *Whiting Rep. at 1. In his opinion, "systems capable of this were in operation before 1990 within the hydrographic/sea surveying community. In addition, within the GIS and mapping industries, the manipulation of data layers and spatial searching were also developed at this time." Id. But, at his deposition, Dr. Whiting elaborated that, "[i]n 1993, GPS receivers would have been in their infancy, and GPS wasn't declared operational . . . until 1994, so there wasn't a full constellation of satellites." Whiting Dep., Def. '533 Ex. 13, [Dkt. No. 51-13] at 87:13-20.

Plaintiff also offers himself as an expert, explaining that he "studied as an industrial designer and [has] almost fifty years of computing experience in design, programming and installation" and is "also an experienced fixed wing and helicopter pilot, with many years in flight simulation and complex interactive computer based training for aircrew." *Taylor Statement at 1. He has submitted a 29-page report on the "ordinary skills needed to perform [his] patent in 1993," which "includes a number of modern day pictures and embedded videos to help put the patented technology into context for the person who does not have the necessary skill in the art of 1993." Taylor Rep., Def. '533 Ex. 7 [Dkt. No. 51-7] at 1.

In support of his motions for summary judgment, the Director offers the testimony of Dr. Peter Dana, an expert in the field of GPS technology. Def. '533 Ex. 1 [Dkt. No. 81-1]. Dr. Dana holds a master's degree and PhD from the Department of Geography at the University of Texas at Austin, and has taught courses on GIS, mapping, and GPS at the University of Texas and Middlebury College since 1995. Before attending graduate school, Dr. Dana spent approximately

twenty years working for numerous companies developing software for radio and GPS-based navigation systems.

After reviewing the specification for the GPS Explorer, Dr. Dana concluded that “[t]he application includes functions that could not yet [have been] implemented in a mobile configuration by 1994.” Id. at 11. As he explained, “[w]hile increasing the number of [points of interest] is obvious, the difficulties in actual implementation of very large linked-lists is another matter.” Id. at 11-12. Specifically, “The applications at issue do not disclose any new approaches to real-time database management that would make the idea of simply increasing the number of points any more efficient or user-friendly, only the obvious idea of an increase in the magnitude of a number.” Id. In addition, “the low resolution displays (640-480 pixels) available at the time” and “the low memory storage capacity of portable devices (typically less than 30MB)” would have made the proposed system difficult to operationalize. Id. at 12.

With respect to the patent claims, Dr. Dana concluded that the claims in the ‘553 Application were “obvious over the prior art, lack written description, and are indefinite.” Id. He reached the same conclusion regarding the claims in the ‘501 Application. Id. As to the ‘860 Application, he found that the claims were “obvious over the prior art, lack enablement, and are indefinite.” Id. at 13. The basic conclusion of Dr. Dana’s report is that “[t]he application does not suggest how the assemblage of components might be incorporated into a working prototype. Therefore, the application describes a notion or a concept, or perhaps even a prediction about the future, but does not provide a complete description of a novel, nonobvious invention.” Id.

II. DISCUSSION

The three civil actions before the Court involve a number of nuanced legal issues, but the overall inquiry focuses on three basic questions: 1) was plaintiff in possession of the invention

when he filed his initial application as demonstrated by the information conveyed in the specification; 2) did he concretely describe the scope of his claimed invention; and, 3) if so, was the invention nonobvious.

A. Standard of Review and Burden of Proof

Under the Patent Act of 1952, if a USPTO examiner denies a patent application and the Board affirms that denial, the dissatisfied applicant may either “appeal the Board’s decision to the United States Court of Appeals for the Federal Circuit,” 35 U.S.C. § 141, or file a civil action against the USPTO Director in federal district court, 35 U.S.C. § 145. “In a § 141 proceeding, the Federal Circuit must review the PTO’s decision on the same administrative record that was before the [USPTO]” and the USPTO’s factual findings will be upheld if they are supported by “substantial evidence.” Kappos v. Hyatt, 132 S. Ct. 1690, 1694 (2012). Conversely, in a civil action under § 145, “an applicant may introduce new evidence before the district court that was not presented to the Patent Office.” Hyatt v. Kappos, 625 F.3d 1320, 1322 (Fed. Cir. 2010), aff’d and remanded, 132 S. Ct. 1690 (2012). “If the parties to a § 145 action do not introduce any new evidence before the district court, the court reviews the case on the same record presented to the agency and the reviewing court must apply the APA’s substantial evidence standard to Patent Office fact findings.” Id. at 1336. But, “when new evidence is introduced, the district court must make de novo fact findings.” Troy v. Samson Mfg. Corp., 758 F.3d 1322, 1328 (Fed. Cir. 2014) (citing Kappos, 132 S. Ct. at 1696).¹¹ At the conclusion of the proceedings, “[t]he court may

¹¹ Defendant argues, without supporting citations, that although plaintiff has submitted new evidence, this “evidence is legally irrelevant,” therefore “the Court must apply the deferential review standards set forth by the APA to its review of the PTAB’s decision.” Def. ‘533 Opp. at 6. This argument, in addition to being devoid of legal support, is undermined by defendant’s briefs, which repeatedly rely on evidence introduced for the first time before this Court, most notably plaintiff’s deposition and defendant’s expert report. See, e.g., id. at 10 (citing plaintiff’s deposition as admitting that various features described in the specification “were not part of the

adjudge that such applicant is entitled to receive a patent for his invention, as specified in any of his claims involved in the decision of the Patent Trial and Appeal Board.” 35 U.S.C. § 145.

Because “the district court acts as a factfinder when new evidence is introduced in a § 145 proceeding,” it “must assess the credibility of new witnesses and other evidence, determine how the new evidence comports with the existing administrative record, and decide what weight the new evidence deserves.” Kappos, 132 S. Ct. at 1700. In addition, “the district court may, in its discretion, consider the proceedings before and findings of the [USPTO] in deciding what weight to afford an applicant’s newly-admitted evidence.” Id. at 1700 (quoting Hyatt v. Kappos, 625 F.3d 1320, 1335 (Fed. Cir. 2010) (en banc)) (internal quotation marks omitted).

Patent prosecutions employ a “burden-shifting” framework, which is “merely a procedural device that enables an appropriate shift of the burden of production.” In re Jung, 637 F.3d 1356, 1362 (Fed. Cir. 2011) (citation and internal quotation marks omitted). The USPTO bears the initial burden of establishing a prima facie case of unpatentability, which “need not be a full exposition on every conceivable deficiency of a claim Rather, its purpose is simply to provide sufficient notice to the applicant to facilitate his effective submission of information.” Hyatt v. Dudas, 492 F.3d 1365, 1370 (Fed. Cir. 2007). The burden then shifts to the applicant to produce evidence or argument to rebut that prima facie case. Id. Finally, patentability is “determined on the entirety of the record, by a preponderance of evidence and weight of argument.” In re Glaug, 283 F.3d 1335, 1338 (Fed. Cir. 2002).

prototype Taylor built, which supports the PTAB’s finding that Taylor was not in possession of his invention at the time of filing”); Def. ‘533 Mem. at 14-16, 18, 20-21; Def. ‘533 Reply, [Dkt. No. 70] at 2; Def. ‘533 Reply to Surreply, [Dkt. No. 83] at 1-2 (“The USPTO’s arguments are supported by citations to testimony by Taylor and his experts, documents Taylor has submitted to the court, the specification, and the claims. This evidence overwhelmingly shows that Taylor did not have possession of his invention when he submitted his patent application and that his claims are indefinite.”).

Summary judgment is appropriate where the record demonstrates that “there is no genuine dispute as to any material fact and that the moving party is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). Although the Court must view the record “in the light most favorable to the non-moving party,” Dulaney v. Packaging Corp. of Am., 673 F.3d 323, 324 (4th Cir. 2012), “[t]he mere existence of a scintilla of evidence in support of the [nonmovant’s] position will be insufficient” to overcome a motion for summary judgment. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 252 (1986); see also Am. Arms Int’l v. Herbert, 563 F.3d 78, 82 (4th Cir. 2009). Rather, a genuine issue of material fact exists only “if the evidence is such that a reasonable jury could return a verdict for the nonmoving party.” Anderson, 477 U.S. at 248.

Where the nonmoving party bears the burden of proof, the party moving for summary judgment may prevail by showing “an absence of evidence to support” an essential element of that party’s case. Celotex Corp. v. Catrett, 477 U.S. 317, 322-25 (1986); see also Rhodes v. E.I. du Pont de Nemours & Co., 636 F.3d 88, 94 (4th Cir. 2011). Once the moving party has successfully demonstrated that absence, the nonmoving party must “come forward with specific facts,” rather than just “metaphysical doubt[s]” or conclusory allegations, that prove that there is a genuine dispute for trial. Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 586-87 (1986) (internal quotations omitted); see also Erwin v. United States, 591 F.3d 313, 319 (4th Cir. 2010). Failure to do so “renders all other facts immaterial” and entitles the movant to summary judgment as a matter of law. Rhodes, 636 F.3d at 94. The court must “draw any permissible inference from the underlying facts in the light most favorable to the party opposing the motion;” however, “those inferences must, in every case, fall within the range of reasonable probability and not be so tenuous as to amount to speculation or conjecture.” Thompson Everett,

Inc. v. Nat'l Cable Adver., L.P., 57 F.3d 1317, 1323 (4th Cir. 1995) (internal quotation marks omitted).

B. Requirements for Patentability

To be eligible for patent protection, a claimed invention must pertain to patentable subject matter, see § 101, and “be novel, see § 102, nonobvious, see § 103, and fully and particularly described, see § 112.” Bilski v. Kappos, 561 U.S. 593, 602 (2010). This litigation focuses on the latter two requirements.

1. Particularly Described

A patent is a property right that rewards inventors with a limited monopoly and “like any property right, its boundaries should be clear.” Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 730 (2002); see also Markman v. Westview Instruments, Inc., 517 U.S. 370, 373 (1996) (“It has long been understood that a patent must describe the exact scope of an invention and its manufacture . . .”). To this end, the Patent Act of 1952 requires applicants to clearly define the scope of their invention. This requirement is three-fold.

Section 112(a) instructs that the “specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.” “[T]his statutory language mandates satisfaction of two separate and independent requirements: an applicant must both describe the claimed invention adequately and enable its production and use.” Alcon Research Ltd. v. Barr Labs., Inc., 745 F.3d 1180, 1188 (Fed. Cir. 2014).

a. Written Description

“[The written] description is the quid pro quo of the patent system; the public must receive meaningful disclosure in exchange for being excluded from practicing the invention for a limited period of time.” Enzo Biochem, Inc. v. Gen-Probe, Inc., 323 F.3d 956, 970 (Fed. Cir. 2002). An additional purpose of § 112(a) is “to demonstrate that the patentee is in possession of the invention claimed.” Zoltek Corp. v. United States, 815 F.3d 1302, 1308 (Fed. Cir. 2016). In this way, the written description requirement “ensure[s] that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor’s . . . patent specification.” Reiffin v. Microsoft Corp., 214 F.3d 1342, 1345 (Fed. Cir. 2000). “A mere wish or plan for obtaining the claimed invention does not satisfy the written description requirement.” Novozymes A/S v. DuPont Nutrition Biosciences APS, 723 F.3d 1336, 1344 (Fed. Cir. 2013) (internal citation omitted). A patent “is not a reward for the search, but compensation for its successful conclusion.” Ariad, 598 F.3d at 1353. “For that reason, the written description requirement prohibits a patentee from ‘leaving it to the . . . industry to complete an unfinished invention.’” Novozymes A/S, 723 F.3d at 1350 (citing Ariad, 598 F.3d at 1353)

“There is no rigid requirement that the disclosure contain either examples or an actual reduction to practice; the proper inquiry is whether the patentee has provided an adequate description that in a definite way identifies the claimed invention in sufficient detail such that a person of ordinary skill would understand that the inventor had made the invention at the time of filing.” Allergan, Inc. v. Sandoz Inc., 796 F.3d 1293, 1308 (Fed. Cir. 2015) (emphasis added). That assessment “requires an objective inquiry into the four corners of the specification,” as “the hallmark of written description is disclosure.” Ariad, 598 F.3d at 1351. “The requirement is applied in the context of the state of knowledge at the time of the invention” and the “written description need not include information that is already known and available to the experienced

public.” Zoltek Corp., 815 F.3d at 1308 (internal quotation marks omitted). “[T]he level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology.” Ariad, 598 F.3d at 1351. “Whether a claim satisfies the written description requirement is a question of fact.” Alcon Research Ltd., 745 F.3d at 1190.

b. Enablement

Under the enablement requirement of Section § 112(a), “the specification must enable one of ordinary skill in the art to practice the claimed invention without undue experimentation.” Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc., 699 F.3d 1340, 1355 (Fed. Cir. 2012). A court “gauges enablement at the date of the filing, not in light of later developments.” CFMT, Inc. v. Yieldup Int’l Corp., 349 F.3d 1333, 1339 (Fed. Cir. 2003). Enablement is ultimately a question of law, although it is based on subsidiary factual findings. Takeda Pharm. Co. v. Zydus Pharm. USA, Inc., 743 F.3d 1359, 1368–69 (Fed. Cir. 2014).

“This important doctrine prevents both inadequate disclosure of an invention and overbroad claiming that might otherwise attempt to cover more than was actually invented. Thus, a patentee chooses broad claim language at the peril of losing any claim that cannot be enabled across its full scope of coverage.” MagSil Corp. v. Hitachi Glob. Storage Techs., Inc., 687 F.3d 1377, 1380–81 (Fed. Cir. 2012). In keeping with this principle, “[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable. . . . Tossing out the mere germ of an idea does not constitute enabling disclosure.” Genentech, Inc. v. Novo Nordisk A/S, 108 F.3d 1361, 1366 (Fed. Cir. 1997).

Whether undue experimentation is required “is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations.” ALZA Corp. v. Andrx Pharms., LLC, 603 F.3d 935, 940 (Fed. Cir. 2010). The non-exhaustive list of factors to be considered when determining if the claimed invention requires undue experimentation includes:

(1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

Cephalon, Inc. v. Watson Pharm., Inc., 707 F.3d 1330, 1336 (Fed. Cir. 2013). For purposes of enablement, “a specification need not disclose what is well known in the art,” ALZA, 603 F.3d at 940–41; however this is “merely a rule of supplementation, not a substitute for a basic enabling disclosure.” Genentech, Inc., 108 F.3d at 1366. In other words, “omission of minor details does not cause a specification to fail to meet the enablement requirement. However, when there is no disclosure of any specific starting material or of any of the conditions under which a process can be carried out, undue experimentation is required; there is a failure to meet the enablement requirement that cannot be rectified by asserting that all the disclosure related to the process is within the skill of the art.” Id. In short, “[i]t is the specification, not the knowledge of one skilled in the art, that must supply the novel aspects of an invention in order to constitute adequate enablement.” Id.

With respect to the relationship between written description and enablement, the Federal Circuit acknowledges that “there is little difference in some fields between describing an invention and enabling one to make and use it.” Ariad Pharm., Inc. v. Eli Lilly & Co., 598 F.3d 1336, 1352 (Fed. Cir. 2010). “[B]ut that is not always true.” Id. In addition, “requiring a written

description of the invention plays a vital role in curtailing claims that do not require undue experimentation to make and use, and thus satisfy enablement, but that have not been invented, and thus cannot be described.” Id. “The two requirements, while related and springing from the same factual predicates, each carry a separate purpose. The purpose of the enablement requirement is to ensure that the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims.” Crown Operations Int’l, Ltd. v. Solutia, Inc., 289 F.3d 1367, 1378–79 (Fed. Cir. 2002) (internal quotation marks and footnote omitted). In contrast, the written description requirement mandates that a patentee “adequately identify what [they have] invented” “so that one skilled in the art can recognize what is claimed.” Enzo Biochem, Inc. v. Gen-Probe Inc., 285 F.3d 1013, 1020-21 (Fed. Cir.), opinion vacated on reh’g, 323 F.3d 956 (Fed. Cir. 2002).

c. Definiteness

The written description and enablement requirements apply to the specification, whereas definiteness applies to the claims. See Rengo Co. v. Molins Mach. Co., 657 F.2d 535, 551 (3d Cir. 1981). Section 112(b) instructs that “[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.” The definiteness requirement “mandates clarity” because “clear notice of what is claimed” is necessary to “apris[e] the public of what is still open to them.” Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120, 2129 (2014) (citing Markman, 517 U.S. at 373). Otherwise there would be a “zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims.” United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 236 (1942). At the same time, the definiteness requirement recognizes that “absolute precision is unattainable” and “take[s] into account the inherent

limitations of language.” Nautilus, Inc., 134 S. Ct. at 2128-29. Therefore, under the test announced in Nautilus, Inc., “a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” Id. at 2124. In applying this test, courts evaluate definiteness “from the perspective of someone skilled in the relevant art” at the time the patent was filed and read the claims “in light of the patent’s specification and prosecution history.” Id. at 2128. “A determination of claim indefiniteness is a legal conclusion that is drawn from the court’s performance of its duty as a construer of patent claims.” Personalized Media Commc’ns, LLC v. Int’l Trade Comm’n, 161 F.3d 696, 705 (Fed. Cir. 1998).

The definiteness requirement “essentially demands precision in the language of the claim, rather than adequacy of disclosure or description.” Rengo Co., 657 F.2d at 551. Therefore, clearly written claims may be definite even if the specification does “not adequately describe the invention or enable one skilled in the art to reproduce it.” Id. The “subtle relationship between the policies underlying the description and definiteness requirements” exists because “the two standards, while complementary, approach a similar problem from different directions. Adequate description of the invention guards against the inventor’s overreaching by insisting that he recount his invention in such detail that his future claims can be determined to be encompassed within his original creation,” while “[t]he definiteness requirement shapes the future conduct of persons other than the inventor, by insisting that they receive notice of the scope of the patented device.” Id.

2. Obviousness

The last condition of patentability at issue in these civil actions is the requirement that the claimed invention may not be obvious. Specifically:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is [novel], if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.

35 U.S.C. § 103; see also Pub. L. No. 112-29 § 3, 125 Stat. 284, 287. An obviousness analysis concerns the patent's claims, not the embodiments described in the specification. See, e.g., Jackson Jordan, Inc. v. Plasser Am. Corp., 747 F.2d 1567, 1578 (Fed. Cir. 1984) ("The claims, not the particular embodiments, must be the focus of the obviousness inquiry." (emphasis in original)); see also KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 419 (2007) ("In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim.").

Obviousness is a question of law based on underlying facts, which include "the scope and content of the prior art . . . ; differences between the prior art and the claims at issue . . . ; and the level of ordinary skill in the pertinent art." Graham v. John Deere Co. of Kan. City, 383 U.S. 1, 17 (1966). Objective evidence of nonobviousness must also be considered, including "secondary considerations" such as "commercial success, long felt but unsolved needs, failures of others, etc." Id. In its most recent case directly addressing the obviousness standard, the Supreme Court rejected the Federal Circuit's "'teaching, suggestion, or motivation' test (TSM test), under which a patent claim is only proved obvious if 'some motivation or suggestion to combine the prior art teachings' can be found in the prior art, the nature of the problem, or the knowledge of a person having ordinary skill in the art." KSR, 550 U.S. at 407 (quoting Al-Site Corp. v. VSI Int'l, Inc.,

174 F.3d 1308, 1323-24 (Fed. Cir. 1999)). Instead, the Supreme Court found that the proper obviousness inquiry asks “whether the improvement is more than the predictable use of prior art elements according to their established functions,” observing that “[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one.” Id. at 417. Such predictable variations are barred from patentability by the obviousness doctrine, which recognizes “that a patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men.” Id. at 415-16 (quoting Great Atl. & Pac. Tea Co. v. Supermarket Equip. Corp., 340 U.S. 147, 152-53 (1950) (internal quotation marks omitted)).

An obviousness analysis will often require “a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” Id. at 418. But, in conducting that analysis “a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ,” and thus “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim.” Id.

C. The ‘553 Application (1:16-cv-12)

The ‘553 Application, which is titled “GPS Explorer,” addresses the same information system at issue in the other two patent applications. Its most notable distinction appears to be claiming a presentation device for the information system that presents a “video picture of the real world” based on the user’s sensed position overlaid with computer generated representations

regarding nearby places of potential interest. After many rounds of amendments, the final version of the Application contained 27 claims: claims 206, 207, 210, 220, 222, 225-246. The two independent claims in the '553 Application, claims 206 and 222 respectively, recite the following:

206. An information system on a portable device for presenting information to a user, comprising:
 an input device which receives a one or more specified modes of operation of the portable device from the user;
 a sensing device automatically sensing a position of the portable device;
 an orientation determining device which determines a device orientation of the portable device
 a processing device, responsive to the sensing device, configured to access one or more databases that contain entries, the entries containing information on one or more things of interest at one or more locations, the processing device determining at least one entry, from among the entries, based on the sensed position;
 a presentation device, responsive to the processing device, presenting to the user a video picture of the real world that represents the user's real world frame of reference from the sensed position and the sensed device orientation, and overlaying on the video picture of the real world, based on the specified mode of operation, a computer-generated representation of the determined at least one entry,
 wherein the processing device further selects advertising information based on the sensed position, and the presentation device presents the selected advertising information to the user when presenting the video picture of the real world with the overlaid computer-generated representation of the determined at least one entry;
 receiving a user input selecting a portion of the video picture and providing, in response to the input user selection, more detailed information related to the selected portion,
 determining route guidance from the sensed position to a location associated with input user selection; and
 presenting the determined route guidance to the user.

220. A method for providing information to a user on a portable device, comprising the computer-implemented steps of:
 receiving one or more specified modes of operation of the portable device from [sic] the user;
 automatically sensing a position of the portable device;
 determining a device orientation of the portable device;

determining, based on the sensed position, at least one entry from a database containing entries providing information on one or more things of interest at one or more locations;

presenting to the user a video picture of the real world that represents the user's real world frame of reference from the sensed position and the device orientation, and overlaying on the video picture of the real world, based on the specified mode of operation, a computer generated representation of the determined at least one entry,

receiving a user input selecting a portion of the video picture; and providing, in response to the input user selection, more detailed information related to the selected position,

determining route guidance from the sensed position to a location associated with input user selection; and

presenting the determined route guidance to the user.

Defendant's motion for summary judgment argues that plaintiff is not entitled to receive a patent for the '553 Application because it fails to meet the requirements of Section 112 as it lacks both a written description and definiteness and is unpatentable under Section 103 because "numerous patents and publications disclose the claim limitations and [] there was ample motivation to combine the reference[s] to arrive at his claims." Def. '553 Mem., [Dkt. No. 51] at 23. Plaintiff disputes these bases for rejection, arguing that evidence cited by his experts and published documentation regarding available technology "prove[] that the written description was perfectly acceptable, and emphasiz[ing] the comparative advantages of the GPS Explorer rendered not obvious based on prior art." Pl. '553 Opp., [Dkt. No. 68] at 21-28.

In his own "Motion to Reverse the Decision of the PTAB in the 10/425,553 Patent Application," which the Court construes as a motion for summary judgment, plaintiff disputes each of the findings of the Board, primarily relying on arguments about what a person who was skilled in the art would have understood in 1993 upon reading the specification and then offering more detailed explication and illustration of the GPS Explorer's functionality. Pl. '553 Mem., [Dkt. No. 62]. He also raises several procedural challenges to the PTAB's decision, arguing that the PTAB impermissibly relied on "new" grounds for rejection, to which he was denied an

opportunity to respond,¹² and claims that “the USPTO Examiner has engaged in a blocking action for 20 years” by improperly instructing plaintiff to divide the patent to “ma[ke] it easier for the Examiner to avoid grant as the broad scope of the original patent had been compromised.” Id. at 19-21.

Defendant responds that plaintiff’s arguments regarding written description, which rest primarily on “screenshots from modern day equipment, citations to the testimony of his experts, and added explanation of his claim terms . . . shed no light on whether or not the patent specification supports the claims or informs those skilled in the art about the scope of the invention.” Def. ‘553 Opp., [Dkt. No. 65] at 7-9. Defendant also argues that plaintiff’s explanations of the terms the Board found indefinite are found nowhere in the specification and cannot save his Application. Id. at 14. Lastly, the defendant explains that the Board “did not hold that [plaintiff’s] application is unpatentable under new grounds, but merely affirmed the Examiner under the same reasoning pursuant to § 112.” Id. at 15.

For the reasons stated below, the defendant’s motion for summary judgment as to the ‘553 Application will be granted and plaintiff’s motion for summary judgment will be denied.

1. Written Description

The examiner’s explanation for the rejection established a prima facie case that the ‘553 Application failed the written description requirement. A5266-86. Specifically, he explained that the specification did not sufficiently disclose to a person skilled in the art how a video picture of the real world and computer generated representation of an entry retrieved from a database, both of which were based on the user’s sensed position, as well as advertising information and route

¹² Plaintiff raised this argument for each application and because this issue is more fully developed in the context of the ‘501 Application, the Court will address it there. See infra pp. 47-48.

guidance, was “generated and presented to the user simultaneously/at the same time.” A5268-69. In addition, the examiner found that “the determination of route guidance from the sensed position to a location associated with input user selection” was insufficiently disclosed, as was the operation of “an audio-only mode” or an “eyes-free mode.” A5269-70. Based on this explanation, the USPTO satisfied its obligation to put the plaintiff on notice as to shortcomings in the Application with sufficient explanation to enable him to respond, and upon notification of the bases for rejection the burden shifted to the plaintiff “to rebut the prima facie case with evidence and/or argument.” Hyatt v. Dudas, 492 F.3d 1365, 1370 (Fed. Cir. 2007). Plaintiff has not carried that burden.

As explained above, assessing written description “requires an objective inquiry into the four corners of the specification” Ariad, 598 F.3d at 1351, based on the “state of knowledge at the time of the invention,” Zoltek Corp., 815 F.3d at 1308. Based on this standard, defendant’s position that the evidence referenced in plaintiff’s briefs is not relevant to the written description requirement is correct because references to modern technology have no bearing on what a person skilled in the art would have understood in 1993, the priority date of the ‘553 Application. In addition, expert representations that it was possible to build the type of invention envisioned in the specification do not address whether the invention had been made at the time the Application was filed. Similarly, plaintiff’s own explanations of how the invention is intended to work are extrinsic to the “four corners of the specification” and to credit them would violate the fundamental requirement that “the public must receive meaningful disclosure [in the specification] in exchange for being excluded from practicing the invention for a limited period of time.” Enzo Biochem, Inc., 323 F.3d at 970. The most salient evidence in this record is plaintiff’s own admission in his deposition that he had not built the GPS Explorer in 1993 and,

although he developed several prototypes in the years that followed, none fulfilled all the functions outlined in the specification, calling into question whether the specification demonstrates possession of the invention. Plaintiff admits that he did not start development until 1995, 1 Taylor Dep. at 19:6-13, and his own exhibit reveals that as late as 2002 his prototypes did not include many of the functions described in the specification, Pl. '860 Ex. 7 [Dkt. 74-16] at 4.

Turning to the specification itself, the examiner and the PTAB correctly found that the omissions and ambiguities are such that one skilled in the art would not have had the impression that the plaintiff was in possession of the claimed subject matter as of the filing date. Rather, the specification outlined an idea or a plan but fell short of an invention. Novozymes A/S, 723 F.3d at 1344 (“A mere wish or plan for obtaining the claimed invention does not satisfy the written description requirement.”).

The examiner and the PTAB focused on three shortcomings in the written description, although this list is by no means exhaustive. Hyatt, 492 F.3d at 1370 (“A statement of a prima facie case need not be a full exposition on every conceivable deficiency of a claim.”). The first problem was the failure to disclose how information would be displayed on a computer-generated overlay. A5418. Claim 206 discloses a “a presentation device, responsive to the processing device, presenting to the user a video picture of the real world that represents the user’s real world frame of reference from the sensed position and the sensed device orientation, and overlaying on the video picture of the real world, based on the specified mode of operation, a computer-generated representation of the determined at least one entry.” This function is not adequately described in the specification, which simply states that in the “audio visual version of the device” a user may “have both the present image and simulated future in view

simultaneously enabling comparison” and that in the virtual reality version the device “combines the real world image with computer generated images” using “split image spectacles” or “[a]lternatively the computer generated objects may be overlaid on a video picture of the real world and the resulting composite image projected for an observer wearing an artificial reality helmet.” A4013-14. These passages do not teach “how selected [entries] would be presented while presenting a real world video picture with a computer generated overlay.” A5418.

Taylor responds that “a skilled person in 1993 would have had no problem overlaying graphic objects on pictures of the real world, as illustrated here,” Pl. ‘553 Mem. at 4; however, he supports that position not with evidence from 1993, but with a picture of a modern Microsoft smart phone with the screen showing a scenic vista and callout boxes displaying pictures of particular properties located in the vista. Id. This illustration demonstrates the weakness of plaintiff’s evidence because there is no evidence that the featured device was available in 1993. Moreover, the issue is not whether overlaying images was technically possible in 1993 but whether the specification explains how it was to be done in the context of the claimed invention. The specification simply fails to provide that explanation. Taylor’s subsequent explanation in this litigation that “overlaying a computer generated graphic is the clever bit, as it uses the location and orientation of the GPS Explorer device to retrieve graphics from the database to superimpose them on the real world image” by “a simple arrow pointing at a place of interest or a picture of the place you are pointing at or a simulation of an object,” Pl. ‘553 Reply, [Dkt. No. 72] at 5, merely begs the question of how the device performs this function. As the PTAB explained, “a mere sentence indicating a possible use/function of the portable information system fails to adequately describe the claimed subject matter in the manner required.” A5421-22. Rather, “[i]t is the specification, not the knowledge of one skilled in the art, that must supply the

novel aspects of an invention in order to constitute adequate enablement.” Genentech, Inc., 108 F.3d at 1366.

The second shortcoming of the specification is its failure to explain how the device would select advertising based on the user’s position. A5418. Claim 206 states that “the processing device further selects advertising information based on the sensed position, and the presentation device presents the selected advertising information to the user.” The specification makes no mention of advertising beyond stating that “[e]n route advertising could also be inserted into tours at specified points to provide the user with the facility to call ahead to reserve a table for dinner, order flowers, to book a hotel room or reserve a ferry space.” A4012; see also A4014 (“[T]he GPS Explorer system leads the customer to the advertiser.”). This language merely identifies a function of the device. It does not describe the steps to store, select, retrieve, or present the advertising. Plaintiff responds, “[t]o place a geographic [advertisement] is identical to any other point of interest. It is simply another entry in the database with a corresponding location and audio/picture or video.” Pl. ‘553 Reply at 7. Even if the Court were to credit this description, which is not included in the specification, it merely describes the information associated with the advertisement and does not begin to describe how, for example, the device would sort among the stored advertisements or organize the advertisements when presenting them to the user. In the absence of these details, a person skilled in the art would not have understood that plaintiff was in possession of the claimed invention in 1993. Moreover, as plaintiff’s expert, engineer Steve White testified, when he worked on the project between 1995 and 1999, many of the claimed features did not exist. See supra pp. 15-16.

In addition, the specification contains “no teaching of how a destination would be selected, and how route guidance to that destination would be performed,” A5420-21, as required

by claim 206, which discloses “determining route guidance from the sensed position to a location associated with input user selection.” In response, plaintiff points to Figure 3 of the specification, which includes a text call-out stating “Scotney Castle is just around the next bend and it’s a hidden entrance on the left” Pl. ‘553 Reply at 6. This merely describes the type of message that a route guidance system might emit. Elsewhere, in the section of the specification regarding the “audio only” version of the device, it discusses route guidance when describing the various modes, such as “tour mode” and “guidance mode,” but neither of these passages teach how a destination would be selected or how route guidance to that destination would be performed. A4009. Thus, the Court agrees with both the Examiner and the PTAB, which found that “the claimed functions of (1) ‘user input’ selecting a ‘portion of the video picture,’ (2) determining the claimed ‘location associated with the user input selection,’ and (3) determining and presenting route guidance to that location, ‘would require much more . . . skill and knowledge than is disclosed in the specification,’ particularly since the disclosed guidance embodiments are limited to the audio-only mode.” A5421 (citing Examiner’s Answer).

In short, the indeterminacies in the specification violate the prohibition on “leaving it to . . . industry to complete an unfinished invention.” Ariad, 598 F.3d at 1353. Although plaintiff has submitted evidence from today’s technology which he argues established his possession of the invention, defendant is correct that plaintiff “cannot cure his insufficient disclosure with modern day screen shots, new explanations about how his device would work, or argument that one skilled in that art would be familiar with certain technologies.” Def. ‘553 Opp. at 12. The information plaintiff references does not appear in the specification, which is the basis upon which the adequacy of the written description must be assessed. Accordingly, the PTAB correctly found that the ‘553 Application lacked written description.

2. Definiteness

The '553 Application was also rejected as indefinite, an independent basis for rejection. As discussed above, claims 206 and 220 recite providing route guidance “from the sensed position to a location associated with input user selection.” According to both the examiner and the PTAB, the term “a location associated with input user selection” is unclear. A5270, A5422. The first indeterminacy in this term stems from the phrase “input user selection.” According to claim 206, the user input is created by selecting a portion of the video picture; however, the Application says nothing about how this selection occurs. As the PTAB explained, the specification “is silent regarding any aspect of selecting a portion of a video picture,” and a “destination oriented guidance mode” is only disclosed for the audio-only embodiment. A5422. Further, the specification “does not provide any depiction or description of the claimed video picture from which a selection would be made.” A5462. It simply provides that, if the device has a screen, it can also “retrieve still and motion video sequences from a database.” A4007. Elsewhere, the specification describes the means of selection (explaining that the device can “be controlled by voice command or by keyboard, switch or joystick, directly or remotely,” and “[t]he device has an audible menu system . . . enabl[ing] the device to be used hands free and eyes free,” A4007) but it does not explain the manner of selection. In addition, the specification fails to provide an illustration or explanation of the claimed “video picture” or “overlaid computer-generated image” that would be presented to the user in the audio-visual or virtual reality version. A4012-14. And the audio-only version, which mentions prompting a user to choose a destination in the “destination oriented guidance mode,” does not describe the resultant user input. A4009-10.

In addition, the meaning of the “location associated with user input selection” is unclear. According to claim 206 one means of user input is “selecting a portion of the video picture.” But the location associated with the input created by selecting a portion of the video picture is not explained in the specification, which simply describes “[t]he basic device” as a “portable audio information system which uses GPS data . . . to retrieve digital audio from a database.” A4007. As the PTAB found, “[w]hile the Specification may allow one skilled in the art to guess at a number of possible definitions of the phrases ‘selecting a portion of the video picture’ and ‘location associated with input user selection,’ as claimed, such a presumption does not establish reasonable certainty as to the meaning of the phrases.” A5463.

Plaintiff responds that “[t]he database holds the location of all the places of interest, so when one is selected by the user, that location is passed to Guidance as the desired destination, with the user’s present location as the start point.” Pl. ‘553 Opp. at 2. Elsewhere he explains that a user “simply select[s] the place of interest when it appears on the screen. The guidance is then to that location using the lat/Long [sic] in the database for that place of interest.” Id. at 12. As to selecting a portion of the video, plaintiff says, “What could be simpler? If something pops up on the screen that you like, just select it.” Id. at 2. Again, this answer simply begs the question. What is the “something” that “pops up on the screen?” And how does one select a portion of the video picture? Does the user touch the corresponding area of the screen, push a button, use a verbal command? Plaintiff points to language in the specification explaining that a user “may select one or more of the device’s many modes of operation,” id. 12, but this is of no help because the issue is about how to select a destination, namely “a location associated with input user selection.” He also points to the beginning of the specification which, in the context of broadly outlining the functions of the device, states that “[t]he user may preselect the type of data

of interest to him.” Id. at 24. But, read in context, this appears to be about selecting default settings for the device, not selecting a particular location. And, in any event, the specification says nothing of how the user “preselects” the relevant data.

The examiner and the PTAB also observed that claims 241 and 244, which depend on claims 206 and 220, respectively, reference an “audio only mode” and an “eyes-free mode” of operation for the information system described in the independent claims but fail to make clear the distinction between these modes. A5422. On appeal before the PTAB, plaintiff explained that “audio-only mode” is both hands-free and eyes-free (i.e., input would be solely by voice commands) but “eyes-free mode” may include input via hands and does not necessarily have input via voice commands. A5423. This explanation, even if credited, in turn raises questions about the distinction between “audio only mode” and “audio command mode,” which are both claimed in claims 241 and 255. In addition, given that “eyes-free mode” could entail input via hands and other means or simply input via voice commands, it is amenable to two distinct definitions and is therefore indefinite. Id. Finally, there is no indication in the specification of a contemplated distinction between an “eyes-free mode” and an “audio only mode.” A5424. The Court agrees with each of these individual findings by the PTAB and concludes that, taken together, they support the conclusion that “read in light of the specification” claims 241 and 244 “fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” Nautilus, Inc., 134 S. Ct. at 2124.

Plaintiff argues that “audio only mode” “is surely self-explanatory.” Pl. ‘553 Opp. at 3. As to “eyes-free mode,” he claims it is “equally simple” and “is often used with ‘hands-free’ when you are walking, cycling, driving, sailing or flying.” Id. at 3. The Court fails to see how this argument lends any clarity given that “hands-free mode,” “walking mode,” “driving mode,”

and “flying mode” are all claimed as separate modes. More broadly, plaintiff argues that “[n]one of the above present any problem to the skilled person, they are so basic.” Id. But this response misunderstands the issue. Plaintiff is effectively making an enablement argument—that a person skilled in the art would have been “able to build part or all of [his] system by following [his] specification.” Id. Instead the issue in a definiteness evaluation is whether the claims have defined the scope of the invention with “reasonable certainty.” If all a person skilled in the art knows about “eyes-free mode” is that it is often used with “hands-free mode,” that is not enough to “point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention.” 35 U.S.C. § 112. To the contrary, although someone skilled in the art may have some general conception of what “eyes free” means with reference to a portable device, in the context of an invention that also claims a “walking mode,” a “driving mode,” a “flying mode,” an “audio command mode,” an “audio mode,” and a “a hands-free mode,” the meaning of “eyes-free mode” is far from clear. As a result, the ‘553 Application was rightly rejected as indefinite.

3. Obviousness

The third basis for the examiner’s rejection was obviousness. A5270-77. In other words, the examiner found that prior art references disclosed all elements of the claimed system and there was motivation to combine them. The PTAB reversed this basis for rejection, stating that it was “unable to make a proper review of the prior art rejections without having to speculate on the meaning of the rejected claims.” A5424. In support of this conclusion, the PTAB cited In re Steele, 305 F.2d 859, 862 (C.C.P.A. 1962) for the proposition that “A prior art rejection cannot be sustained if the hypothetical person of ordinary skill in the art would have to make speculative assumptions concerning the meaning of claim language.” A5424. The Court agrees that the

indeterminacies in the claim language discussed above make any obviousness inquiry unduly speculative. In addition, because the ‘553 Application fails on both written description and definiteness, both of which are independent bases for rejection, the Court need not reach the obviousness rejection. Instead, it will grant defendant’s motion for summary judgment and deny plaintiff’s motion for summary judgment based on the ‘553 Application’s lack of written description and indefiniteness.

D. The ‘501 Application (1:15-cv-1684)

Although similar to the ‘553 Application, the ‘501 Application differs by, among other things, claiming an audio output for presenting information to the user. Its final iteration involved 35 claims: claims 1, 7, 8, 11, 18, 24, 26, 29, 30, 34, 35, 38, 39, 41, 47, 51-53, 56, 57, and 61-75. The two independent claims in the ‘501 Application are claims 1 and 35, which state as follows:

1. A system for mobile searching of information by a portable device comprising:
 - an input component providing data retrieval criteria from a user to a computing component of the portable device;
 - a position determining component sensing a position of the portable device and providing the sensed position to the computing component of the portable device;
 - a receiving component which receives data from data transmissions;
 - the computing component which selectively stores the received data based on the sensed position and the computing component is operable to access and search the selectively stored data by selecting, from the selectively stored data, information based on the sensed position and the provided data retrieval criteria;
 - and
 - a presentation component coupled to the computing component presenting to the user a simulated representation, as an aspect of the sensed position, of the selected information.
35. A method of mobile searching of information using a portable device, the method comprising:
 - receiving data retrieval criteria from a user;
 - sensing a position of the portable device;
 - receiving data from data transmissions;
 - selectively storing the received data based on the sensed position;

accessing and searching the selectively stored data by selecting, from the selectively stored data, information on the sensed position and the received data retrieval criteria; and

presenting to the user on the portable device a simulated representation, as an aspect of the sensed position, of the selected information.

The parties' debate about the '501 Application proceeds along similar lines to that of the '553 Application. Defendant has moved for summary judgment arguing that the '501 Application was properly rejected by the USPTO because it fails to meet the written description and definiteness requirements of Section 112 and is obvious under Section 103. Def. '501 Mem [Dkt. No. 55]. In response, plaintiff makes three arguments. First, he contends that "[t]here is nothing in the claims that is not covered by the patent specification." Pl. '501 Opp., [Dkt. No. 73] at 1. Next, he maintains that all of the components of his device were "known in 1993 to enable [his] system to be built as specified." *Id.* at 6. Lastly he argues that the rejection was based on the PTAB's "failure to understand" the technology described in the patent. *Id.* at 6-7.

In his own motion for summary judgment, plaintiff asks the Court to reverse the decision of the PTAB and grant the patent, arguing that procedurally the PTAB improperly rejected the Application based on new grounds without permitting a response and that substantively the PTAB's findings were "ludicrous and unsupportable" and show a "complete lack of understanding of the basic principles involved." Pl. '501 Mem., [Dkt. No. 68] at 1. He contends that the defects perceived by the PTAB "were based on their total lack of skill in the art. "As a result," he contends, "they were not able to properly evaluate [his] patent applications." Pl. '501 Reply, [Dkt. No. 80] at 8. Defendant's opposition observes that plaintiff was allowed to respond to the PTAB's new grounds for rejection through a request for rehearing, which he did, and argues that before this Court plaintiff has failed to show that the PTAB's decision was substantively wrong because he points to no language in the specification that refutes the prima

facie case for rejection based on lack of written description and indefiniteness. Def. ‘501 Opp., [Dkt. No. 70].

For the reasons discussed below, defendant’s motion for summary judgment regarding the ‘501 Application will be granted and plaintiff’s motion for summary judgment will be denied.¹³

1. The PTAB’s New Grounds for Rejection

Plaintiff contends that the PTAB’s new grounds for rejection, namely inadequate written description and indefiniteness, “den[ied] [him] a proper decision on the merits of [his] patent application.” Pl. ‘501 Mem. ¶ 1. Specifically, he argues that the new grounds for rejection put him in “an unusual situation” because the applications have now passed the end of their twenty-year term so he could not present new evidence to the USPTO, namely an expert declaration, without causing the expiration of his applications. Id. ¶ 4. “Filing the lawsuits in the District Court was therefore [his] only option to continue the appeal, while allowing [him] to submit expert declarations into the court, to contest the PTAB’s new grounds of rejection.” Id. This argument misunderstands both the procedural requirements surrounding new grounds for rejection and the substantive bases for the PTAB’s rejection.

As defendant correctly explains, the PTAB’s decision affirming the denial of the Application based on new grounds was not final and permitted plaintiff to either reopen prosecution or request rehearing of the PTAB’s decision. Def. ‘501 Opp. at 10 (citing 37 C.F.R. § 41.50(b)(1&2)). Plaintiff’s request for a rehearing was granted and he was able to respond to

¹³ As with the ‘553 Application, the PTAB declined to reach the obviousness ground for the rejection of the ‘501 Application because the deficiencies regarding the written description and definiteness requirements would require undue speculation in analyzing prior art references. The Court agrees with this conclusion and therefore will not evaluate the ‘501 Application under 35 U.S.C. § 103.

the new grounds for rejection. A3122-37. In addition, although plaintiff claims that he could not have reopened prosecution at the time the PTAB entered new grounds for rejection because doing so would have left him with no patent term, this problem is not attributable to the PTAB but to the duration of plaintiff's patent prosecution and the many rounds of claim amendments. Moreover, because the written description rejection was based on an "objective inquiry into the four corners of the specification," Ariad, 598 F.3d at 1351, and definiteness focuses on the precision of the claims language, it is not clear how submitting expert opinions to the USPTO would have advanced plaintiff's argument. Accordingly, plaintiff's argument that his procedural rights were violated by the PTAB when it entered new grounds for rejection fails.

2. Written Description

With respect to the Application's written description, the PTAB found that the specification "provide[d] insufficient disclosure to allow one skilled in the art to recognize that the inventor invented selectively storing received data based on sensed position, and accessing and searching selectively stored data based on the sensed position and the received data retrieval criteria, as called for by claims 1 and 35." A3117. Specifically, claim 1 recited a "computing component which selectively stores the received data based on the sensed position and the computing component is operable to access and search the selectively stored data by selecting, from the selectively stored data, information based on the sensed position and the provided data retrieval criteria." Claim 35 similarly recites "selectively storing the received data based on the sensed position" and "accessing and searching the selectively stored data by selecting, from the selectively stored data, information on the sensed position and the received data retrieval criteria." Before the PTAB, plaintiff argued that this process worked as follows:

The claims requir[ing] data to undergo two selection processes. The first is to select data from a transmission wherein the selection is based on sensed

position. This first round of data selection is stored locally on the portable device. The second round of data selection involves searching the first selected data based on sensed position (again) and data criteria. Data selected from the second round is presented to the user.

A3116. Although this description is arguably consistent with the language in the claims, the PTAB found that there was no support for these claims in the specification, which states that the system can be programed to “automatically identify places of likely interest to the user The user can also initiate an automatic search of the database for specific things of interest to him . . . , usually, though not necessarily, within a radius of his present position.” A4006. Elsewhere, in describing one of the four embodiments of the GPS Explorer, the “real time version,”¹⁴ the specification describes a real time data system as follows:

To enable the user to have access to up to the minute information the device incorporates a radio or television receiver to receive specially broadcast regional data transmissions. The system selects incoming data relevant to the chosen mode of use and location based on GPS calculated position. Selected data items are stored in memory in the device on receipt and then handled in the same way as other database data described earlier.

The real time data system could provide the user with access to and automatically search a wide range of information sources: local weather, weather reports for pilots and yachtsmen, scheduled flight delays, details of special events, hotel room availability, road conditions, audio guided diversions, financial market updates for example.

A4013.

This language does not support the independent claims. As an initial matter, the real time version of the invention is the only embodiment in the specification that discloses selectively storing data, indicating that this function is not included in the other

¹⁴ As a reminder, the four embodiments are 1) an audio only interface, 2) an audio and visual interface, 3) an information system that incorporates real time information, and 4) a virtual reality version that would “generate virtual objects” based on the user’s GPS position and project them into the user’s “field of view using split image spectacles.” A4008-14.

embodiments, such as the audio version. As explained by the PTAB, although all four embodiments of the invention store data, “[t]he Specification does not disclose a single embodiment of the invention that selectively stores data based on location as taught in the real time embodiment, and then retrieves data based on that location and data retrieval criteria.” A3143 (emphases added). Instead, the different embodiments detailed in the specification disclose, for example, either storing data (as compared to selectively storing it) and then retrieving it based on sensed location¹⁵ or storing data based on sensed location and then retrieving it based on other criteria (not necessarily based on sensed location).¹⁶

In addition, even assuming the specification referenced a uniform process for selectively storing and retrieving data, the two step process plaintiff described before the PTAB, which first involved selecting and storing information based on the user’s sensed position and then searching that subset of data based on sensed position and other criteria, raises doubt about whether plaintiff was in possession of the claimed invention because “one skilled in the art would not find it reasonable to selectively store data based on a location, and then retrieve data based on that same location.” A3143. In other words, storing a set of data based on a given criterion and then retrieving information from the data set based on the same criterion would be redundant. Even if this redundancy appeared reasonable to one skilled in the art, plaintiff’s claim that data is first selected based on sensed location information is in tension with the subsequent

¹⁵ For example, the audio version discloses that “audio describing each place of interest will then be recorded and stored, in compressed form, with corresponding GPS co-ordinates, in a database on a compact disc (GPS-CD),” A4008, and the audio visual version discloses that “[s]till and/or motion video sequences will be stored on GPS/CD along with the GPS co-ordinates described in the audio example above. This visual data can then be accessed in several modes . . . [.]” A4012.

¹⁶ See infra for description of the real time version.

selection criteria described in the specification. For example, “financial market updates,” A4013, are not specific to a certain locale but usually reference multiple global markets, and the specification states that a user’s search for things of interest may “not necessarily” be for things “within a radius of his present position,” A4006. In light of these disparities between the claims and the specification, the Court agrees with the USPTO that the specification does not permit one skilled in the art to conclude that the inventor was in possession of the claimed invention at the time of the priority date. Rather, the tensions in the specification suggest that plaintiff is claiming that which “ha[s] not been invented, and thus cannot be described.” Ariad Pharm., Inc., 598 F.3d at 1352.

In response, plaintiff argues that he has “provided substantial detailed evidence in the form of videos of the original systems in use on the road and copies of programming code for many of the original prototype systems that [he] built between 1992 and 2005.” Pl. ‘501 Opp. at 12. Plaintiff further emphasizes that he “employed five software developers between 1995 and 2004,” funded in part by a grant from the U.K. government. Id. at 13. But these responses, which address whether plaintiff actually built the invention while his patent Application was being prosecuted, misunderstand the issue. The USPTO’s decision was not based on enablement—whether an information system like the one described in the specification could be built. Rather, it was based on the application’s failure to provide an adequate written description, namely “whether the patentee . . . identifies the claimed invention in sufficient detail such that a person of ordinary skill would understand that the inventor had made the invention.” Allergan, 796 F.3d at 1308. Moreover, when assessing possession of the invention, the relevant inquiry is not

whether the invention was ever built but whether it was in the inventor's possession as of the priority date, id., in this case May 1993.¹⁷

3. Definiteness

The USPTO also rejected the '501 Application because the term "data retrieval criteria" was indefinite. A3118. As discussed above, claim 1 recited a computing component that is able to "search the selectively stored data by selecting, from the selectively stored data, information based on the sensed position and the provided data retrieval criteria" and claim 35 similarly recites "searching the selectively stored data by selecting, from the selectively stored data, information on the sensed position and the received data retrieval criteria." As the PTAB explained, the term "data retrieval criteria" is neither defined nor discussed in the specification so as to enable a person skilled in the art to understand what it means. The specification merely states that "[t]he user may select the mode of operation of the device, data retrieval criteria and other operating criteria." A4007. Before the PTAB, plaintiff argued that an example of the claimed data retrieval criteria appeared on page 2 of the specification, which states that "[t]he user can also initiate an automatic search of the database for specific things of interest to him, such as landmarks, hotels, hospitals, shops, or products, usually, though not necessarily, within a radius of his present position." A4006. The PTAB was not satisfied with this explanation and found that "[t]his exemplary listing of what [plaintiff] now contends to be exemplary data

¹⁷ In response to the defendant's argument that Taylor did not start working on a prototype until after the priority date of the invention, plaintiff responds that "the development work on the GPS Explorer system was started in 1992 in Kent where a database was created with points of interest around [his] village These [points of interest] were used in the patent application filed in May 1993," Pl. '501 Opp. at 20; however, the prototypes plaintiff identifies date from 1997 and 2002. Id. at 23. The question is not whether plaintiff had started work by 1992 but whether he had finished it by May 1993, the priority date on which he claimed he was in possession of the invention as fully described in the specification. As plaintiff's evidence demonstrates, he obviously had not.

retrieval criteria” fails to delineate “the scope” of the term, thereby rendering the claims indefinite. In his request for rehearing, plaintiff pointed to additional language in the specification that described a user selecting data but also argued that the term “data retrieval criteria” could be defined “by its own language” as “a criteria used to retrieve data and particularly the selectively stored data.” A3146-47. The PTAB rejected this argument, finding that the descriptions of data in the specification varied, in some instances referring to things of interest to the user and in others referring to the criteria used to order retrieved data into a prioritized list. A3146-47. The PTAB also found that plaintiff had “failed to explain how each of the embodiments in the specification, and the language of the claims themselves, is consistent with only a single plausible definition of data retrieval criteria,” concluding that the multiple plausible definitions of the term made the claim indefinite. *Id.* The Court agrees with the PTAB’s conclusions.

In this § 145 proceeding, plaintiff adds little to the arguments he made before the PTAB, when he was represented by counsel. He simply states, “‘Data retrieval criteria’ has been dealt with ad nauseum. What are the criteria for a Google search? There are none, you just search for what you want, but it must be in the database to get a meaningful result.” Pl. ‘501 Opp. at 26.¹⁸ In another brief, he adds that “The USPTO itself has PAIR—Patent Application Information Retrieval system, where the user inputs their search Criteria. There is nothing contentious about the use of words to describe the data retrieval system.” Pl. ‘501 Mem. ¶ 2. This cursory discussion does nothing to rebut the USPTO’s prima facie case. As plaintiff acknowledges, the criteria “must be in the database to get a meaningful result.” What a user might search for is

¹⁸ Elsewhere, plaintiff acknowledges that he filed his patent application “before Google was formed.” *Taylor Statement at 6.

infinitely varied, but a data system will only offer meaningful results for discrete types of queries. One element of indefiniteness identified by the PTAB was that the specification failed to describe the criteria for which the GPS Explorer would return meaningful results. In addition, as the PTAB observed, in some instances the specification refers to data in connection with things of interest to the user and in other contexts it refers to the criteria used to prioritize query results. Although a person skilled in the art might have a general understanding of the term “data retrieval criteria,” the PTAB correctly concluded that the indefiniteness of the specification would preclude persons skilled in the art from understanding what the term means in the context of the ‘501 Application, creating a “zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims.” United Carbon Co., 317 U.S. at 236.

Because the ‘501 Application is both indefinite and lacks written description, defendant’s motion for summary judgment will be granted and plaintiff’s motion for summary judgment will be denied.

E. The ‘860 Application (1:15-cv-1607)

The ‘860 Application is distinct from the other two applications at issue, most notably for presenting information to the user as a computer based simulation responsive to the “user’s orientation.” It contained 31 claims after the final round of amendments: claims 1, 4, 6, 9, 13, 15, 17-19, 22, 23, 27, 28, 31, 33, 35, 36, 73, 74, and 76-87. The two independent claims, 1 and 19, state as follows:

1. A system for mobile searching of information, comprising:
 - a portable device that accesses a database, wherein the portable device further comprises;
 - an input component which allows a user to select type of data of interest to the user;
 - a position determining component sensing a position of the portable device, and providing the sensed position to a computing component of the portable device;

an orientation determining component which determines a user's view angle of azimuth and provides the user's view angle of azimuth to a presentation component;

the computing component operable to access the database and retrieve data from the database based on the type of data of interest, and the received sensed position; and

the presentation component presenting the retrieved data to the user as a computer-based simulation that illustrates an aspect of a physical location at the sensed position based on the user's view angle of azimuth from the physical location, wherein the input component receives a specified mode of operation of the portable device from the user, and the presentation component presents the retrieved data to the user based on the specified mode of operation.

19. A method of mobile searching of information using a portable device, the method comprising:

on the portable device, receiving selected type of data of interest and a specified mode of operation of the portable device from the user;

sensing a position of the portable device and determining a user's view angle of azimuth;

accessing a database attached to the portable device and retrieving data from the database based on the type of data of interest and the sensed position; and

presenting the retrieved data to the user as a computer-based simulation that illustrates an aspect of a physical location at the sensed position based on the user's view angle of azimuth, wherein the presenting the retrieved data further comprises presenting the retrieved data to the user based on the specified mode of operation.

Defendant has moved for summary judgment regarding the '860 Application, which the PTAB rejected based on failure to comply with Section 112. Def. '860 Mem., [Dkt. No. 60].¹⁹ Specifically, the PTAB found that the Application lacked enablement and was indefinite. The defendant also adds written description as a basis for rejection; however, because this basis was not included in the prima facie case established by either the examiner or the PTAB, and the aforementioned grounds are sufficient to sustain a rejection, the Court will not address the written description argument.

¹⁹ Here again, for the reasons stated above the Court declines to reach the obviousness rejection cited by the examiner and advanced by the defendant in his motion.

Plaintiff has not filed a motion for summary judgment regarding the '860 Application but he has filed an opposition and a surreply in response to defendant's motion. His central contention is, again, that the PTAB's decision was based on a series of "misunderstandings" stemming from "their lack of expertise in search, simulation, and database techniques." Pl. '860 Opp., [Dkt. No. 74] at 1. He cites to his expert witnesses' testimony "that they could have constructed part or all of [his] system by following [his] specification." Id. at 2. Beyond these and other appeals to extrinsic evidence, his arguments largely restate those made before the PTAB.²⁰

1. Enablement

The PTAB found that claim 1 and all its dependent claims were non-enabled based on two terms that were insufficiently disclosed in the specification. A0956-63. The first enablement problem revolves around the term "orientation determining component." A0956. According to the claim, the system for mobile searching of information included an "orientation determining component which determines a user's view angle of azimuth." The specification does not define the term "orientation" or "orientation determining component." The PTAB stated that one skilled in the art would understand "orientation" "to be the function or output of the claimed 'orientation determining component'" and that "orientation" is most commonly defined as a "determination of the relative position of something (relative to a given frame of reference)." A0958 (internal quotation marks omitted). According to the PTAB, for a mobile or portable device, orientation is typically defined as "a combination of three angular quantities: Azimuth, pitch, and roll." Id. (internal footnote omitted). Azimuth is most easily understood as the bearing of a point in

²⁰ As with the '501 Application, plaintiff argues that it was improper for the PTAB to introduce a new ground for rejection. Pl. Opp. at 2. This argument fails for the same reasons set forth above.

reference to magnetic north (i.e., a compass bearing). See Azimuth, McGraw-Hill Dictionary of Scientific and Technical Terms (6th ed. 2003). Pitch refers to the degree of elevation, or what might more colloquially be referred to as the upward or downward slope of an object. See Pitch, id. And roll is the bank angle of an object, such as an airplane tilting to the right or left. See Roll, id. The specification states that “[t]he device determines user orientation, direction of movement, speed, pitch and role, altitude, rate of climb or descent, and the user’s direction of view in terms of bearing, angle of azimuth and range.” A4008 (emphases added). Based on this sentence, both the examiner and the PTAB concluded that the specification implies that “user orientation” is a separate determination from a “user’s direction of view,” rendering the claim for an information system with an “orientation determining component which determines a user’s view angle of azimuth” non-enabled. A0801, A0958.

Before the PTAB, plaintiff contended that “orientation” was not separate from “direction of view” but rather that determining “orientation” included determining the user’s view angle of azimuth and one skilled in the art would understand that the parameters listed in the specification might be related and overlap in scope. A0957. According to plaintiff, the compass function described in the specification determines the user’s orientation, which includes the user’s view angle of azimuth. Id. In support, plaintiff cited the portion of the specification stating that “[t]he system will orientate the user by compass bearing or turn left/right command enabling the user to be directed to a pathway or to safety.” A4010. The examiner concluded that although the specification “state[d] that a compass bearing orients the user, one skilled in the art would not understand what structure would be used for determining the ‘user’s view angle of azimuth’” as referenced in claim 1. A0957. The PTAB agreed, finding that “[t]he only mention of using a compass is to provide a compass bearing to a user.” A0959. It added that “[e]ven if there is a

defined correlation between compass heading and azimuth as proposed by [plaintiff], the Specification refers to outputting a compass bearing to guide a user, rather than determining the bearing.” Id. Finally, the PTAB observed that plaintiff had “claimed an orientation determining component, rather than a compass, such that an orientation determining component can perhaps cover a broader scope than a compass. . . . Even if use of a compass to determine a user’s view angle of azimuth were enabled by [plaintiff’s] disclosure, the broader scope of an ‘orientation determining component,’ to the extent that the meaning and breadth of the term ‘orientation’ as used in the [plaintiff’s] Specification is understood, it is not enabled.” A0959.

In his request for rehearing, plaintiff argued that in determining that orientation and user’s view angle of azimuth are two distinct parameters, the PTAB overlooked that the term “orientation” should be understood as part of a component name rather than a parameter. Plaintiff pointed out that “orientation” is included in the term “orientation determining component,” which is included in the same claim limitation as the “user’s view angle of azimuth.” A0995-96. The PTAB disagreed, explaining that because the word “orientation” was a modifier in the term “orientation determining component” it would not be proper to give the term “orientation” no weight. The Court agrees that based on the specification persons skilled in the art would not understand what the terms “orientation determining component” and “user’s view angle of azimuth,” as used in claim 1, mean independently or in relation to each other. As the Federal Circuit has cautioned, “a patentee chooses broad claim language at the peril of losing any claim that cannot be enabled across its full scope of coverage,” MagSil Corp., 687 F.3d at 1380–81, and the broad and indeterminate scope of the terms in claim 1 is fatal to the Application.

The second enablement problem identified by the examiner and the PTAB pertains to the simulation embodiment of the device. Claim 1 recites a “presentation component presenting the

retrieved data to the user as a computer-based simulation.” It elaborates that “the input component [of the portable device] receives a specified mode of operation of the portable device from the user, and the presentation component presents the retrieved data to the user based on the specified mode of operation.” Similarly, claim 19 recites “presenting the retrieved data to the user as a computer-based simulation.”

In assessing claim 1, the examiner concluded that the presentation of a computer-based simulation only occurs in a “simulation mode,” which is selected by the user via an input device. A0802. Looking to the specification, the examiner found that it failed to enable receiving a “specified mode of operation” for presenting retrieved data to a user via a computer-based simulation while the device is in “simulation mode.” A0803. In his appeal before the PTAB, plaintiff argued that the claims do not require a “simulation mode,” but rather that “simulation” simply refers to a computer generated presentation and the claimed mode refers to the manner in which the system is being used, such as “walking mode” and “aviation mode.” A0961. These modes, plaintiff claimed, were inputs used to generate the simulation, which varied based on the mode of use. Id.

The PTAB affirmed the conclusion of the examiner, finding that the specification did not support plaintiff’s argument. Id. In particular, the section of the specification describing the distinction between “walking mode,” “aviation mode,” etc., pertained to the “audio only” embodiment of the device. A4008-11. In describing that embodiment, the specification never discussed simulation within a mode or concurrent modes. Rather, in a separate section discussing the audio visual embodiment, the specification describes three modes of operation: “pre-view mode,” “more detail mode,” and “simulation mode.” A4012-13. According to the specification’s description of the “simulation mode,” once a user has “arrived at a physical location or identified

it in “pre-view mode,” the user may access the database to obtain a computer based simulation of some aspect of the location. . . . The simulation may be presented on a display screen or any form of image projection system such as a virtual reality helmet or other device.” A4013. Based on this description, the PTAB found that the specification “fails to describe or enable one skilled in the art to present a simulation of retrieved data based on a selected mode.” A0961. The specification’s description of a simulation as something that is depicted once a user arrives at a location or selects it in “pre-view mode” “is simply not the same as presentation of a simulation of retrieved data based on a specified mode of operation.” A0962.

The PTAB also found that the specification only described simulation as a “mode” while claim 6 characterized “simulation mode” as a “mode of operation” among a list that also included “walking mode” and “driving mode,” producing uncertainty about whether simulation occurs as a mode of operation and “whether and how simulation can be based on another mode of operation selected by the user.” A0962. In light of these uncertainties and inconsistencies, the PTAB concluded that claim 1 and all the claims that depended thereon were non-enabled. For the same reasons, it found that claim 19, which recites presenting data to the user “as a computer-based simulation . . . based on the specified mode of operation,” and all its dependent claims also failed “to enable one skilled in the art to present a simulation of retrieved data based on a selected mode.” Id.²¹

Plaintiff took issue with the PTAB’s characterization of the claim term “mode of operation” in his request for rehearing, arguing that by teaching that more detail is given when in

²¹ The examiner and the PTAB also discussed another independent basis for rejecting the dependent claims in 86 and 87 as non-enabled, A0962-63; however, because the foregoing findings are sufficient to conclude that claims 86 and 87 are non-enabled, the Court does not reach this additional basis for rejection.

“walking mode,” the specification enables “presenting the retrieved data to the user based on the specified mode of operation.” A0998. In support, plaintiff points to a section of the specification explaining that “when walking slowly around a town a user will be given more detail than when driving through the town or flying overhead.” Plaintiff argued that this indicates that the amount of detail presented to the user is determined based on the selected mode, which is consistent with the claim language, such that the term “mode” is enabled by the specification and that simulation is not a “mode” in the context of claims 1 and 19. The Board rejected this characterization, reiterating that the specification “only states that a simulation occurs after a location is selected in a preview mode, which is simply not the same as presentation of a simulation of retrieved data based on a specified mode of operation.” A0999. The Court agrees. The mere fact that the specification indicates that the amount of detail presented to the user may vary depending on the user’s method of travel tells persons skilled in the art nothing about the operation of the “simulation mode.” In particular, because the specification and the claims discuss many modes of operation that are not limited to method of travel—such as “walking mode” or “driving mode”—notwithstanding plaintiff’s explanation, claim 1’s recitation that “the presentation component presents the retrieved data to the user based on the specified mode of operation” is non-enabled.

Before this Court, plaintiff attempts to draw a distinction between two different types of “modes.” Pl. ‘860 Opp. at 7-8. He argues that claims 1 and 19 and the parts of the specification that refer to “walking mode,” “driving mode,” and “flying mode,” use the term “mode” in one context and claims that the specification uses the term “mode” in another context when referring to “pre-view mode” and “simulation mode.” Id. “As is clear from the claims,” plaintiff writes, “the term ‘mode’ in the claims refers to the context of selecting walking, driving, flying and

other modes of travel. The claims do not require that a simulation occur as a mode of operation, or that a simulation be a mode of operation.” *Id.* at 8. But this explanation fails to offer a comprehensible distinction between the two different “contexts” in which plaintiff contends the term is used and it also fails to cite to language in either the specification or the claims that supports this distinction. To the contrary, the alleged distinction between the contexts is belied by the claims, which lists the following as “modes of operation”: “a simulation mode; . . . a walking mode; a driving mode; and a flying mode.” Claim 6.

In light of the indeterminacies regarding “orientation determining component” and “user’s view angle of azimuth,” as well as “mode” and “mode of operation,” the Court finds that the specification would not have enabled one skilled in the art to practice the invention without undue experimentation.

2. Definiteness

Building on its enablement analysis, the PTAB also rejected claims 1 and 19 as indefinite under Section 112(b). First, it found that the claim terms “orientation” and “view angle of azimuth,” as well as their relation to each other, were unclear. Stated differently, reading these terms in light of the specification, one skilled in the art would not understand what is claimed in the context of the invention. Second, the PTAB found that the word “mode” and, by extension, the term “mode of operation” were unclear insofar as one skilled in the art would not understand what criteria distinguish a “mode” from a simulation or function or presentation type. Because claims 1 and 19 include the terms “view angle of azimuth” and “mode of operation,” the PTAB found these claims and the claims that depend therefrom indefinite.

In his request for rehearing before the PTAB, plaintiff challenged the Board’s indefiniteness finding as to view angle of azimuth, arguing that the Board 1) failed to explain

why a person of ordinary skill in the art would not have been able to practice the orientation determining component based on the disclosure of a compass, 2) did not explain why one skilled in the art would have been confused by the term, 3) did not show multiple plausible constructions of the term, and 4) did not explain why one skilled in the art would not have been enabled to make and use an orientation determining component. A0990-91. Before this Court, plaintiff repeats these same arguments, claiming that as a result of these omissions from the PTAB opinion, “no prima facie case has been made” and “the rejection should be withdrawn.” Pl. ‘860 Opp. at 3.

The PTAB was unmoved by plaintiff’s arguments at the rehearing phase. As the Board explained, its rationale for rejecting the ‘860 Application was that conflicting language in the specification and claims regarding the meaning of the terms “orientation” and “view angle of azimuth” would have caused one skilled in the art to be confused by the term “orientation determining component,” making the claims indefinite. A0991. As to plaintiff’s argument that the specification’s disclosure regarding a user being able to use the device to take a compass bearing constitutes an enabling disclosure of use of a compass and GPS devices to retrieve data regarding the user’s view angle of azimuth, the PTAB found that this claim was not supported by the language in the specification which merely stated that a compass bearing can be used to orient the user. A0992. As the PTAB explained, this language, considered in light of the specification’s description of a device that determines orientation as information separate from the user’s direction of view in terms of angle of azimuth, would not inform one skilled in the art about the scope of the claim for an orientation determining component. A0993.

Plaintiff further argued, as he does now, that one skilled in the art would have known how to incorporate GPS navigation systems and electronic compasses into a portable electronic

device because both tools were well known. Id.; Pl. ‘860 Opp. at 4. The PTAB found that even if one skilled in the art did possess this knowledge, this “does not rectify the inconsistency between the claimed orientation determining component determining a view angle of azimuth, and the specification’s description of a device that determines orientation as information separate from the user’ view angle of azimuth.” A0993. This inconsistency, which has been ably explained by the PTAB, is fatal to the ‘860 Application. Definiteness “demands precision in the language of the claim,” and the imprecision of plaintiff’s claim language fails to provide the public appropriate notice of the scope of the patented device. Rengo Co., 657 F.2d at 551. Instead, it impermissibly creates “a zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims.” United Carbon Co., 317 U.S. at 236.

Plaintiff’s request for rehearing also challenged the PTAB’s indefiniteness finding regarding the term “mode of operation,” arguing that the Board overlooked his appeal argument that the mode of operation recited in the claims refers to the manner in which the system is being used, for example, “walking mode” and “aviation mode.” A0994. The PTAB disagreed. Id. Indeed, the argument that “mode” refers to “walking mode” or “aviation mode” was explicitly discussed in the Board’s enablement analysis. A0961. And, as the PTAB explained during rehearing, its definiteness discussion made it clear that it was unable to construe the claim term “mode” in a way that was consistent with its uses throughout the specification and the claims. A0994. Therefore, “[t]he determination of indefiniteness was made due to there being multiple plausible, but inconsistent, constructions of the term ‘mode,’ rather than due to a lack of a single plausible construction of the term.” A0994-95. Plaintiff’s briefs before the Court do not refute this conclusion but merely echo his arguments before the PTAB. Having reviewed the prior rounds of debate and the arguments advanced by both parties, the Court is persuaded that the

PTAB's reasoning was sound and accordingly adopts as its own the PTAB's conclusion that "mode" and "mode of operation" are indefinite.

Based on defendant's showing that the '860 Application was non-enabled and indefinite, the USPTO's motion for summary judgment will be granted.


III. CONCLUSION

Looking beyond the PTAB's nuanced, technical analysis of the specification and claims language, the evidence before this Court overwhelmingly demonstrates that plaintiff was not in possession of the claimed invention as of the 1993 priority date. Plaintiff may have conceived of the idea and drawn a one-page visual aid as of that date, but he had not built it or drawn up detailed schematics. 1 Taylor Dep. at 15:21-16:7 (explaining that when he drew his sketch he "knew nothing about patents . . . [he] simply had the idea" and because he needed a patent application to apply for government funding he "drafted [his] own patent"). Moreover, plaintiff admitted in his deposition that he did not begin development work until 1995 and he ultimately hired a team of engineers to do the development for him. *Id.* at 19:6-13. Over the next decade, plaintiff worked to realize his idea but the first prototype was not operational until 1998 and neither that prototype nor the 2001 version contained all the features described in the specification, much less the claims. Pl. '860 Opp. Ex. 7 at 4. Plaintiff also acknowledges that during this time the concept of the invention changed, particularly as the growth of the Internet changed the information that was available for mobile users and as the devices available to host his system became more advanced. 2 Taylor Dep. at 11:21-13:19. Based on this evidence, it is apparent that, while plaintiff may have had a prescient idea, he was not in possession of an invention in 1993 and, therefore, is not entitled to the patents claimed in the applications before the Court.

For the reasons in this Memorandum Opinion, defendant's motions for summary judgment will be granted and plaintiff's motions for summary judgment will be denied by an accompanying Order.

Entered this 10th day of August, 2017.

Alexandria, Virginia

/s/ 

Leonie M. Brinkema
United States District Judge

Claims Appendix

I. The '553 Application (Drawn from the Claims Appendix in plaintiff's PTAB brief. A5350-57.)

206. An information system on a portable device for presenting information to a user, comprising:

- an input device which receives a [sic] one or more specified modes of operation of the portable device from the user;

- a sensing device automatically sensing a position of the portable device;

- an orientation determining device which determines a device orientation of the portable device

- a processing device, responsive to the sensing device, configured to access one or more databases that contain entries, the entries containing information on one or more things of interest at one or more locations, the processing device determining at least one entry, from among the entries, based on the sensed position;

- a presentation device, responsive to the processing device, presenting to the user a video picture of the real world that represents the user's real world frame of reference from the sensed position and the sensed device orientation, and overlaying on the video picture of the real world, based on the specified mode of operation, a computer-generated representation of the determined at least one entry,

- wherein the processing device further selects advertising information based on the sensed position, and the presentation device presents the selected advertising information to the user when presenting the video picture of the real world with the overlaid computer-generated representation of the determined at least one entry;

- receiving a user input selecting a portion of the video picture and providing, in response to the input user selection, more detailed information related to the selected portion,

- determining route guidance from the sensed position to a location associated with input user selection; and

- presenting the determined route guidance to the user.

207. The information system of Claim 206, wherein the sensing device is a Global Positioning Satellite (GPS) receiver or other satellite positioning receiver.

210. The information system of claim 206, wherein among the entries containing information on one or more things of interest at one or more locations, at least a portion of the entries contain still videos or motion video sequences.

220. A method for providing information to a user on a portable device, comprising the computer-implemented steps of:

- receiving one or more specified modes of operation of the portable device from [sic] the user;

- automatically sensing a position of the portable device;

- determining a device orientation of the portable device;

- determining, based on the sensed position, at least one entry from a database containing entries providing information on one or more things of interest at one or more locations;

presenting to the user a video picture of the real world that represents the user's real world frame of reference from the sensed position and the device orientation, and overlaying on the video picture of the real world, based on the specified mode of operation, a computer generated representation of the determined at least one entry,

receiving a user input selecting a portion of the video picture; and providing, in response to the input user selection, more detailed information related to the selected position,

determining route guidance from the sensed position to a location associated with input user selection; and

presenting the determined route guidance to the user.

222. The method of claim 220, further comprising:

receiving data retrieval criteria from the user, the received data retrieval criteria comprising information related to a place of interest to the user,

wherein the determining the at least one entry comprises determining the at least one entry from the database based on the sensed position and the received data retrieval criteria, the determined at least one entry comprising data on the place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone; and dialing, by the portable device, the telephone number using the telephone upon selection of the place of interest or selection of the telephone number by the user.

225. The method of claim 220, wherein the determining further comprises selecting advertising information based on the sensed position, and the presenting further comprises presenting the selected advertising information to the user when presenting the video picture of the real world with the overlaid computer-generated representation of the determined at least one entry.

226. The method of claim 220, wherein the selected advertising information comprises a place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone, and the method further comprises dialing the telephone number using the telephone upon selection of the place of interest or selection of the telephone number by the user.

227. The method of claim 220, further comprising

receiving data retrieval criteria from the user, the received data retrieval criteria comprising information related to a type of data of interest to the user, wherein the determining the at least one entry comprises:

determining the at least one entry from the database based on the sensed position and the received data retrieval criteria, the determined at least one entry comprising data of a plurality of places of interest related to the type of data of interest to the user, and ranking the plurality of places of interest based on distance from the sensed position,

wherein the presenting comprises presenting the ranked plurality of places of interest to the user for selection by the user

228. The method of claim 227, further comprising:

receiving, from 'the [sic] user, a selection of a place of interest, from among the ranked plurality of places of interest presented to the user; and

retrieving a telephone number associated with the place of interest in response to the received selection, wherein the portable device comprises a telephone; and dialing, by the portable device, the telephone number using the telephone upon selection of the telephone number by the user.

229. The method of claim 220, further comprising
retrieving data retrieval criteria from the user, the received data retrieval criteria comprising information related to a place of interest that the user intends to visit;
retrieving information on the place of interest the user intends to visit based on the received data retrieval criteria;
retrieving visual sequences of the place of interest the user intends to visit; and
presenting the retrieved visual sequences of the place of interest the user intends to visit to the user.

230. The method of claim 220, wherein the automatically sensing comprises automatically sensing the position of the portable device using a sensing device comprising a radio and a Global Positioning Satellite (GPS) receiver.

231. The method of claim 220, wherein the determining at least one entry comprises determining the at least one entry further based on the time of day.

232. The information system of claim 206, further comprising:
an input component which receives data retrieval criteria from the user, the received data retrieval criteria comprising information related to a place of interest to the user,
wherein the processing device determines the at least one entry based on the sensed position and the received data retrieval criteria, the determined at least one entry comprising data on the place of interest and a telephone number associated with the place of interest, and,
wherein the portable device comprises a telephone, and the portable device dials the telephone number using the telephone upon selection of the place of interest or selection of the phone number by the user.

233. The information system of claim 206, further comprising:
an input component which selects a portion of the video picture,
wherein the processing device provides, in response to the selected portion, more detailed information related to the selected portion.

234. The information system of claim 233, wherein the processing device further determines route guidance from the sensed position to a location associated with the selected portion, and the presentation device presents the determined route guidance to the user.

236. The information system of claim 206, further comprising:
an input component which receives data retrieval criteria from the user, the received data retrieval criteria comprising information related to type of data of interest to the user, wherein the processing device determines the at least one entry based on the sensed position and the received data retrieval criteria, the determined at least one entry comprising data on a plurality of places

of interest related to the type of data of interest to the user, and the processing device ranks the plurality of places of interest based on distance from the sensed position,
wherein the presentation device presents the ranked plurality of places of interest to the user for selection by the user.

237. The information system of claim 236, wherein the input component receives a selection of a place of interest, from among the ranked plurality of places of interest presented by the presentation device, from the user, and the processing device retrieves a telephone number associated with the place of interest in response to the received selection by the input component, wherein the portable device comprises a telephone, and the portable device dials the telephone number using the telephone upon selection of the telephone number by the user.

238. The information system of claim 206, further comprising:
an input component which receives data retrieval criteria from the user, the received data retrieval criteria comprising information related to a place of interest the user intends to visit, wherein the processing device retrieves information on the place of interest the user intends to visit based on the received data retrieval criteria, and the processing device retrieves visual sequences of the place of interest the user intends to visit,
wherein the presentation device presents the visual sequences of the place of interest the user intends to visit to the user in response [sic] the processing device retrieving the visual sequences.

239. The information system of claim 206, wherein the sensing device comprises a radio and a Global Positioning Satellite (GPS) receiver.

240. The information system of claim 206, wherein the processing device determines the at least one entry further based on the time of day.

241. The information system of claim 206, wherein the input device receives the specified mode or modes of operation from among the plurality of modes of operation comprising:

- a walking mode;
- a driving mode;
- an en route mode;
- a tour mode;
- a walking tours mode;
- an automatic search mode;
- a manual search mode;
- a guidance mode;
- a destination oriented guidance mode;
- a what's on mode;
- a flying mode;
- an application specific modes;
- a call ahead mode;
- an audio command mode;
- a preview mode;

- a more detail mode;
- a hazard warning mode;
- a simulation mode;
- an audio only mode;
- a hands-free mode; and
- an eyes-free mode

242. The information system of claim 241, wherein to focus the users [sic] attention on certain data in the specified mode, the presentation device provides the user with detail regarding the determined at least one entry related to the specified mode of use.

243. The information system of claim 206, wherein other than the specified mode of operation of the portable device, the portable device includes a preview mode, and in response to the input device receiving the preview mode as a selected mode of operation, the input device further receives name or location information of a remote location from the user that the user intends to visit,

wherein the processing device retrieves visual sequences of the remote location from the one or more databases based on the received name or the received location information, and the presentation device presents the visual sequence of the remote location to the user.

244. The method of claim 220, wherein the receiving the specified mode of operation comprises receiving the specified mode or modes of operation from among a plurality of modes of operation comprising:

- a walking mode;
- a driving mode;
- an en route mode;
- a tour mode;
- a walking tours mode;
- an automatic search mode;
- a manual search mode;
- a guidance mode;
- a destination oriented guidance mode;
- a what's on mode;
- a flying mode;
- an application specific modes;
- a call ahead mode;
- an audio command mode;
- a preview mode;
- a more detail mode;
- a hazard warning mode;
- a simulation mode;
- an audio only mode;
- a hands-free mode; and
- an eyes-free mode

245. The method of claim 244, wherein in the specified mode, the presentation device provides the user with appropriate detail regarding the determined at least one entry to the mode of travel or use to focus the users [sic] attention on certain data.

246. The method of claim 220, wherein other than the specified mode of operation of the portable device, the portable device includes a preview mode, wherein the method further comprises:

- receiving the preview mode as a selected mode of operation;
- receiving, in response to receiving the preview mode as the selected mode of operation, name or location information of a remote location from the user that the user intends to visit;
- retrieving visual sequences of the remote location from the database based on the received name or
- the received location information; and
- presenting the visual sequences of the remote location to the user.

II. The '501 Application (Drawn from the Claims Appendix in plaintiff's PTAB brief. A3041-51.)

Claims 1, 7, 8, 11, 18, 24, 26, 29, 30, 34, 35, 38, 39, 41, 47, 51-53, 56, 57, and 61-75 on appeal.

1. A system for mobile searching of information by a portable device comprising:
an input component providing data retrieval criteria from a user to a computing component of the portable device;
a position determining component sensing a position of the portable device and providing the sensed position to the computing component of the portable device;
a receiving component which receives data from data transmissions;
the computing component which selectively stores the received data based on the sensed position and the computing component is operable to access and search the selectively stored data by selecting, from the selectively stored data, information based on the sensed position and the provided data retrieval criteria; and
a presentation component coupled to the computing component presenting to the user a simulated representation, as an aspect of the sensed position, of the selected information.

7. The system of claim 1, wherein the input component further selects a portion of the presented information, the computing component provides, in response to the selected portion, more detailed information related to the selected portion.

8. The system of claim 7, wherein the computing component further determines route guidance from the sensed position to a location associated with the selected portion.

11. The system of claim 1, wherein the presentation component includes an audio output for presenting at least part of the selected information in audio form to the user.

18. The system of claim 1, wherein the position determining component comprises at least one of: a global positioning system (GPS) receiver; an optical reader receiving position inputs; and a radio receiving position inputs.

24. The system of Claim 1, wherein the data received from the data transmissions includes at least one of:

- information related to weather;
- information related to sights;
- information related to places of interest;
- information related to buildings;
- information related to businesses;
- information related to shopping;
- information related to restaurants;
- information related to finance;
- information related to flight conditions;
- information related to hotels;
- information related to events;
- information related to products;
- information related to entertainment; and
- information related to advertising.

26. The system of Claim 1 wherein the portable device includes modes of operation comprising at least one of:

- an en route mode;
- a tour mode;
- a hazard warning mode;
- a guidance mode;
- a destination oriented guidance mode;
- a simulation mode;
- a what's on mode;
- a walking mode;
- a driving mode; and
- a flying mode.

29. The system of Claim 1 wherein the position determining component senses both a position of the portable device and at least one additional parameter; and wherein the computing component is operable to access and search the selectively stored data by selecting, from the selectively stored data, information based on the data retrieval criteria, the sensed position, and the sensed at least one additional parameter.

30. The system of Claim 29 wherein the at least one additional parameter comprises at least one of:

- a direction in which the portable device is pointing;
- a direction of travel of the portable device;
- a route of travel of the portable device;
- a speed of travel of the portable device;
- a direction of movement of the portable device;
- an altitude or change in altitude of the portable device;
- a time of day, a day of the week, or a day of the year; and

a calendar date.

34. The system of Claim 1 wherein the computing component further selects advertising information based on the sensed position, and the presentation component presents the advertising information to the user when presenting the simulated representation.

35. A method of mobile searching of information using a portable device, the method comprising:

- receiving data retrieval criteria from a user;
- sensing a position of the portable device;
- receiving data from data transmissions;
- selectively storing the received data based on the sensed position;
- accessing and searching the selectively stored data by selecting, from the selectively stored data, information on the sensed position and the received data retrieval criteria; and
- presenting to the user on the portable device a simulated representation, as an aspect of the sensed position, of the selected information.

38. The method of Claim 25, further comprising:

- enabling user selection of a portion of the presented information; and
- providing, in response to the user selection, more detailed information related to the selected portion of information.

39. The method of Claim 38, further comprising:

- determining route guidance from the sensed position to a location associated with selected portion; and
- presenting the determined route guidance to the user.

41. The method of Claim 35, wherein presenting the selected information to the user includes presenting at least part of the selected information in audio form to the user.

47. The method of Claim 35 wherein sensing a position of the portable device comprises sensing position via at least one of: a global positioning system (GPS) receiver; an optical scanner receiving position inputs; and a radio receiver receiving position inputs.

51. The method of Claim 35, wherein the data received from the data transmissions includes at least one of:

- information related to weather;
- information related to sights;
- information related to places of interest;
- information related to buildings;
- information related to businesses;
- information related to shopping;
- information related to restaurants;
- information related to finance;
- information related to flight conditions;
- information related to hotels;

information related to events;
information related to products;
information related to entertainment; and
information related to advertising.

52. The method of Claim 35 further receiving a specified mode of operation from the user.

53. The method of Claim 52 wherein the mode of operation comprises at least one of:
an en route mode;
a tour mode;
a hazard warning mode;
a guidance mode;
a destination oriented guidance mode;
a simulation mode;
a what's on mode;
a walking mode;
a driving mode; and
a flying mode.

56. The method of Claim 35, wherein the sensing the position for the portable device comprises sensing both the position of the portable device and at least one additional parameter; and wherein the accessing and searching comprises searching the stored data by selecting, from the stored data, information based on the sensed position, the data retrieval criteria, and the at least one additional parameter.

57. The method of Claim 56 wherein the at least one additional parameter comprises at least one of:

a direction in which the portable device is pointing;
a direction of travel of the portable device;
a route of travel of the portable device;
a speed of travel of the portable device;
a direction of movement of the portable device;
an altitude or change in altitude of the portable device;
a time of day, a day of the week, or a day of the year; and
a calendar date.

61. The method of Claim 35, wherein the selecting further comprises selecting advertising information based on the sensed position and the presenting further comprises presenting the advertising information to the user when presenting the simulated representation.

62. The method of Claim 35, wherein the data transmissions are specially broadcast regional data transmissions and the receiving the data comprises receiving the data from the specially broadcast regional data transmissions.

63. The method of claim 35, further comprising:

receiving a specified mode of operation of the portable device from the user; and
the selectively storing the received data comprises selectively storing the received data
based on the sensed position and the received specified mode of operation of the portable device.

64. The method of claim 35, wherein the data retrieval criteria comprises information related to a place of interest, the selected information comprises data on the place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone, and the portable device dials the telephone number using the telephone upon selection of the place of interest or selection of the telephone number by the user.

65. The method of claim 61, wherein the selected advertising information comprises a place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone, and the method further comprises dialing the telephone number using the telephone upon selection of the place of interest or selection of the telephone number by the user.

66. The system of claim 1, wherein the data transmissions are specially broadcast regional data transmissions and the portable device receives the data from the specially broadcast regional data transmissions.

67. The system of claim 1, wherein the user specifies a mode of operation of the portable device via the input component; and
the computing component selectively stores the received data based on the sensed position and the specified mode of operation of the portable device.

68. The system of claim 1, wherein the data retrieval criteria comprises information related to a place of interest, the selected information comprises data on the place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone, and the portable device dials the telephone number using the telephone upon selection of the place of interest or selection of the telephone number by the user.

69. The system of claim 34, wherein the selected advertising information comprises a place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone, and the portable device dials the telephone number using the telephone upon selection of the place of interest or selection of the telephone number by the user.

70. The system of claim 1, wherein the user controls the system via the input component which receives user input, including the data retrieval criteria, by voice command.

71. The system of claim 1, wherein the user controls the system via the input component which receives user input, including the data retrieval criteria, by joystick control.

72. The system of claim 67, wherein in the specified mode of operation, the system provides an audible facilities menu and the user selects a facility from the audible facilities menu via the input component.

73. The method of claim 35, wherein the receiving comprises receiving the data retrieval criteria by voice command.

74. The method of claim 35, wherein the receiving comprises receiving the data retrieval criteria by joystick control.

75. The method of claim 63, further comprising:
providing, in response to receiving the specified mode of operation, an audible facilities menu and the user selects a facility from the audible facilities menu.

III. The '860 Application (Drawn from the Claims Appendix in plaintiff's PTAB brief. A0863-71.)

1. A system for mobile searching of information, comprising:
a portable device that accesses a database, wherein the portable device further comprises:
an input component which allows a user to select type of data of interest to the user;
a position determining component sensing a position of the portable device, and
providing the sensed position to a computing component of the portable device;
an orientation determining component which determines a user's view angle of azimuth and provides the user's view angle of azimuth to a presentation component;
the computing component operable to access the database and retrieve data from the database based on the type of data of interest, and the received sensed position; and
the presentation component presenting the retrieved data to the user as a computer-based simulation that illustrates an aspect of a physical location at the sensed position based on the user's view angle of azimuth from the physical location, wherein the input component receives a specified mode of operation of the portable device from the user, and the presentation component presents the retrieved data to the user based on the specified mode of operation.

4. The system of Claim 1 wherein the database has information stored thereon, the information comprising at least one of:
information related to weather;
information related to sights;
information related to places of interest;
information related to buildings;
information related to businesses;
information related to shopping;
information related to restaurants;
information related to finance;
information related to flight conditions;
information related to hotels;
information related to events;
information related to products;
information related to entertainment; and
information related to advertising.

6. The system of Claim 1 wherein the received mode of operation of the portable device is selected by the user from at least one of:

- an en route mode;
- a tour mode;
- a hazard warning mode;
- a guidance mode;
- a destination oriented guidance mode;
- a simulation mode;
- a what's on mode;
- a walking mode;
- a driving mode; and
- a flying mode.

9. The system of Claim 1 wherein the presentation component presents the retrieved data from the database based on at least one additional parameter in addition to the user's view angle of azimuth and the received sensed position, wherein at least one additional parameter comprises any of:

- a direction of travel of the portable device;
- a route of the portable device;
- a speed of travel of the portable device;
- a direction of movement of the portable device;
- an altitude or change in altitude of the portable device;
- a time of day, a day of the week, or a day of the year; and
- a calendar date.

13. The system of Claim 1 wherein the computing component further retrieves advertising information based on the sensed position, and the presentation component presents the advertising information to the user when presenting the retrieved data.

15. The system of claim 1 wherein the user, using the input component, selects portions of the presented data, the computing component, in response to the user selection, providing the user with more detailed information related to the selected portions of the presented data.

17. The system of Claim 1 wherein the position determining component comprises at least one of: a global positioning system (GPS) receiver; an optical reader receiving position inputs; and a radio receiver receiving position inputs.

18. The system of Claim 1 wherein the presentation component includes an audio output for presenting a portion of the retrieved data in audio form to the user.

19. A method of mobile searching of information using a portable device, the method comprising:

- on the portable device, receiving selected type of data of interest and a specified mode of operation of the portable device from the user;
- sensing a position of the portable device and determining a user's view angle of azimuth;

accessing a database attached to the portable device and retrieving data from the database based on the type of data of interest and the sensed position; and
presenting the retrieved data to the user as a computer-based simulation that illustrates an aspect of a physical location at the sensed position based on the user's view angle of azimuth, wherein the presenting the retrieved data further comprises presenting the retrieved data to the user based on the specified mode of operation.

22. The method of Claim 19 wherein the database has information stored thereon, the information comprising at least one of:

- information related to weather;
- information related to sights;
- information related to places of interest;
- information related to buildings;
- information related to businesses;
- information related to shopping;
- information related to restaurants;
- information related to finance;
- information related to flight conditions;
- information related to hotels;
- information related to events;
- information related to products;
- information related to entertainment; and
- information related to advertising.

23. The method of Claim 19, wherein the received mode of operation of the portable device is selected by the user from at least one of:

- an en route mode;
- a tour mode;
- a hazard warning mode;
- a guidance mode;
- a destination oriented guidance mode;
- a simulation mode;
- a what's on mode;
- a walking mode;
- a driving mode; and
- a flying mode.

27. The method of Claim 19, wherein the presenting comprises presenting the retrieved data from the database based on at least one additional parameter in addition the user's view of angle of azimuth and the received sensed position.

28. The method of Claim 27 wherein the at least one additional parameter comprises at least one of:

- a direction of travel of the portable device;
- a route of travel of the portable device;
- a speed of travel of the portable device;

a direction of movement of the portable device;
an altitude or change in altitude of the portable device;
a time of day, a day of the week, or a day of the year; and
a calendar date.

31. The method of Claim 19 wherein the retrieving further comprises retrieving advertising information based on the sensed position, and the presenting further comprises presenting the advertising information to the user when presenting the retrieved data.

33. The method of Claim 19 further comprising enabling the user to select portions of the presented data, and in response to the user selecting portions of the presented data, providing the user with more detailed information related to the selected portions of the presented data.

35. The method of Claim 19 wherein the sensing the position comprises determining position via at least one of: a global positioning system (GPS) receiver; an optical reader receiving position inputs; and a radio receiver receiving position inputs.

36. The system of Claim 19 wherein the presenting further comprises presenting a portion of the retrieved data in audio form to the user.

73. The system of Claim 15, wherein the computing component further determines route guidance from the sensed position of a location associated with the selected portions of the presented data; and the presentation component further presents the determined route guidance to the user.

74. The method of Claim 33 further comprising:
determining route guidance from the sensed position to a location associated with the selected portions of the presented data; and
presenting the determined route guidance to the user.

76. The method of claim 19, wherein in response to sensing a change to the sensed position of the portable device, the retrieving further comprises retrieving data from the databased based on the changed sensed position, and the presenting further comprises presenting the retrieved data to the user as a changed computer-based simulation that illustrates an aspect of a physical location at the changed sensed position based on the user's view of the azimuth from the physical location.

77. The method of claim 76, wherein the changed computer-based simulation presented to the user is generated based on at least one additional parameter selected from a user's height and time of day.

78. The method of claim 19, wherein the type of data of interest comprises information related to a place of interest, the retrieved data comprises data on the place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone, and the portable device dials the telephone number using the telephone upon selection of the place of interest or selection of the retrieved telephone number by the user.

79. The method of claim 31, wherein the retrieving comprises retrieving the advertising information based on the type of data of interest and the sensed position.

80. The method of claim 31, wherein the retrieved advertising information comprises a place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone, and the method further comprises dialing the telephone number using the telephone upon selection of the place of interest or selection of the retrieved telephone number by the user.

81. The system of claim 1, wherein in response to the position determining component sensing a change to the sensed position of the portable device, the computing component retrieves data from the database based on the changed sensed position, and the presenting component presents the retrieved data to the user as a changed computer-based simulation that illustrates an aspect of a physical location at the changed sensed position based on the user's view angle of azimuth from the physical location.

82. The system of claim 81, wherein the changed computer-based simulation presented to the user is generated based on at least one additional parameter selected from a user's height and time of day.

83. The system of claim 1, wherein the type of data of interest comprises information related to a place of interest, the retrieved data comprises data on the place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone, and the portable device dials the telephone number using the telephone upon selection of the place of interest or selection of the retrieved telephone number by the user.

84. The system of claim 13, wherein the computing component retrieves the advertising information based on the type of data of interest and the sensed position.

85. The system of claim 13, wherein the retrieved advertising information comprises a place of interest and a telephone number associated with the place of interest, the portable device comprises a telephone, and the portable device dials the telephone number using the telephone upon selection of the place of interest or selection of the retrieved telephone number by the user.

86. The system of claim 1, wherein other than the specified mode of operation of the portable device, the portable device includes a preview mode, and in response to the input component receiving the preview mode as a selected mode of operation, the input component further receives name or location information of a remote location from the user that the user intends to visit, wherein the computing component retrieves visual sequences of the remote location from the database based on the received name or the received location information, and the presentation component presents the visual sequence of the remote location to the user.

87. The method of claim 19, wherein other than the specified mode of operation of the portable device, the portable device includes a preview mode, wherein the method further comprises:

receiving the preview mode as a selected mode of operation;
receiving in response to receiving the preview mode as the selected mode of operation,
name or location information of a remote location from the user that the user intends to visit;
retrieving visual sequences of the remote location from 'the [sic] database based on the
received name or the received location information; and
presenting the visual sequences of the remote location to the user.